

Cp379.17

H63h

# HIGH SCHOOL MANUAL

INCLUDING

## REORGANIZATION PROGRAM

---

1929



PUBLISHED BY THE  
STATE SUPERINTENDENT OF PUBLIC INSTRUCTION  
RALEIGH, N. C.



The Library  
of the  
University of North Carolina



This book was presented

by

State Supt. of Public  
Instruction

Cp 379.17

H63h

(  
o  
—  
14  
21  
8  
188  
5 May  
28 Ju  
23 Oct  
21 Jul  
12



# HIGH SCHOOL MANUAL

INCLUDING

## REORGANIZATION PROGRAM

---

1929



PUBLISHED BY THE  
STATE SUPERINTENDENT OF PUBLIC INSTRUCTION  
RALEIGH, N. C.

## INTRODUCTION

---

This manual has been prepared to furnish guidance to superintendents, supervisors, principals, teachers, and other school officials. It sets forth the aims and purposes of secondary education, the requirements for accredited high schools, and gives other valuable material with reference to the organization and administration of the high schools.

There is reprinted as a part of this manual the High School Reorganization program instituted in 1926-1927 which contains certain suggested curricula including a program of studies and suggested schedules for the organization of small high schools. These curricula were evolved by college and high school officials after a thorough study of the facts from many angles and in the light of modern high school development. The plan of organization as outlined by this program has been generally approved by all school officials who have considered it. It has now been available for the guidance of school officials for three years. The whole scheme has met with favorable response, and it is believed that a more thorough and effective high school organization has been built up as a result of the work already done. I should like to ask the continued coöperation of all people interested in the development of the rural high schools in this matter, so that we can offer a universal high school opportunity on a high level of efficiency to all the boys and girls of this State.

This manual was prepared by Dr. J. Henry Highsmith and Mr. J. L. Memory, Jr., of the Division of School Inspection. It is not intended to give any permanent "set" to secondary education, but to help bring up the standard in some schools and to suggest lines of development in others. Some progressive schools have already gone beyond the proposals set forth in this manual. For these schools this bulletin may confirm their standards and suggest lines of further development.

I hereby commend the material contained herein to all school officials connected with the public high schools.

*A. T. Allen*

*State Superintendent of Public Instruction.*

May 20, 1929.

134891d



## TABLE OF CONTENTS

	PAGE
Introduction .....	2
Aims and purposes of secondary education .....	5
Requirements for an accredited high school .....	7
1. Number and qualification of teachers .....	7
2. Length of term .....	8
3. Length of recitation periods .....	8
4. Number of units required for graduation .....	8
5. Average daily attendance .....	9
6. Course of study .....	9
7. Equipment .....	9
a. Library .....	9
b. Maps .....	13
c. Science laboratory .....	14
d. General equipment .....	24
e. Office and records .....	27
f. Visual education .....	28
8. Building .....	29
Classification of high schools .....	29
College entrance requirements .....	31
College entrance examination .....	31
North Carolina high school senior examination .....	32
Summer high schools .....	32
Requirements for membership in Association of High Schools and Colleges of the Southern States .....	32
The marking system .....	34
High school achievement and intelligence tests .....	36
Extra-curricular activities .....	38
The professional library .....	42
The principalship .....	48
Principles of organization and administration .....	52



# TABLE OF CONTENTS—*Continued*

PAGE

## The Reorganization Program

Suggested curricula for small high schools:

I.	Three-teacher high school.....	55
II.	4-A. Four-teacher high school..... (Without Home Economics, Agriculture or Industrial Arts)	57
III.	4-B. Four-teacher high school..... (Including Smith-Hughes Home Economics)	59
IV.	4-C. Four-teacher high school..... (Including two years Smith-Hughes Agriculture)	61
V.	4-D. Four-teacher high school..... (Including two years Smith-Hughes Home Economics and two years Smith-Hughes Agriculture)	63
VI.	5-A. Five-teacher high school..... (Without Home Economics, Agriculture, or Industrial Arts)	64
VII.	5-B. Five-teacher high school..... (Including Smith-Hughes Home Economics)	66
VIII.	5-C. Five-teacher high school..... (Including four years Smith-Hughes Agriculture)	68
IX.	5-D. Five-teacher high school..... (Including Smith-Hughes Home Economics and Smith-Hughes Agriculture)	70
X.	6-A. Six-teacher high school..... (Without Home Economics, Agriculture, or Industrial Arts)	72
XI.	6-B. Six-teacher high school..... (With Smith-Hughes Home Economics and Smith-Hughes Agriculture)	75
XII.	6-C. Six-teacher high school..... (With Commercial Education)	77
XIII.	6-D. Six-teacher high school..... (Including Smith-Hughes Home Economics)	79
XIV.	6-E. Six-teacher high school..... (Including four years Smith-Hughes Agriculture)	82
	Index .....	84



## AIMS AND PURPOSES

The public high school system of North Carolina began in 1907 when a law was passed by the General Assembly providing for the establishment of high schools in the various counties in the State. At that time there were, perhaps, 10,000 pupils enrolled in all sorts of high schools, public and private, urban and rural, white and colored. There is no information relative to the number of graduates for that year. During the session 1927-28 there were in all high schools 108,065 pupils enrolled and 13,929 graduates. There has been a change in the enrollment and number of graduates in high school, and there has been a corresponding change in the conception of the function of a high school.

In 1907 the purpose of a high school was considered to be fourfold:

1. Knowledge or scholarship.
2. Formal discipline or training.
3. Character.
4. Preparation for college admission.

The high school was regarded more as a selective agency than a training agency. The purpose was mainly to take the selected few and give them the sort of training that prepared them for admission to college. College training in its turn was regarded very largely as preparation for the professions.

Everyone conversant with the field of secondary education now is familiar with the seven objectives set up in the cardinal principles of education. These seven objectives have been widely discussed and quite generally accepted as being a helpful statement of the situation. The high schools should aim to achieve each of these objectives, some of which were not emphasized to any extent twenty years ago.

1. *Health.* Herbert Spencer in one of the greatest books ever written on education stated that the main purpose of the school was to make the individual a good animal. The same notion is expressed in the words, "Mens sana in corpore sano." (A sound mind in a sound body.) The words are Latin, but the thought is Athenian and is applicable to the present day notion of the importance of health through a well planned program of Physical Education. Students should be given examinations to determine physical defects and the means of remedying these defects should be provided. The school nurse, the county and city health authorities, and all other agencies should be employed to secure the health of school children. Health habits should be formed and pupils should be taught, not only the value of health from a personal standpoint, but also the necessity of providing hospital facilities for the community, the value of medical inspection, and the necessity for maintaining high standards of public health and public sanitation.

2. *Worthy home membership.* What is taught in the school should carry over to the home to the largest extent possible. The training in each subject can be carried over to the home life of the child to some extent. This is particularly true, perhaps, in Home Economics, Science, Literature, and Manual Training. The students should be taught those things which will contribute most largely to their equipment for sharing the responsibility of the home.



3. *Vocation.* When only a few pupils attended high school and there were only a few graduates who were expected to go on to college for professional training, the question of vocational training in the high school was not a serious one. Today, however, when millions of boys and girls are attending high school in this nation, the majority of whom will not go on to college, those who administer school affairs are forced to the consideration of what the boys and girls will do when they leave high school. Until recently very little attention was given to this problem in North Carolina. It is very clear now that with more than 100,000 boys and girls in high school it is necessary to think somewhat in terms of vocational training. The three main lines of vocational training in this State thus far are: Agriculture, Home Economics, and Commercial Education. Agriculture is a vocation; Home Economics is only partly so; Commercial Education has been given mainly in private high schools. North Carolina is becoming more and more an industrial state and the increased demand for work of a commercial sort will warrant increased emphasis upon Commercial Education, particularly in the larger type rural schools and city schools. The vocational courses given and the vocational training, therefore, which is emphasized should be set up in keeping with the needs in the various communities in the State. This training should be very definite and very thorough and designed to meet the real needs of the boys and girls. Careful attention should be given to the matter of vocational guidance.

4. *Citizenship.* It is generally recognized that it is important for boys and girls to know something about how to perform their duties as citizens. Increased emphasis has been placed upon this subject. Through extra-curricular activities (more properly called allied activities), through courses in Civics, Problems of Democracy, Government, through the various kinds of clubs and other organizations, the high school student is given very helpful and real training in citizenship. He is taught his responsibility and obligation to the group of which he is a member. Not only ideas about citizenship, but ideals are taught and practiced as far as possible in the school with the hope that the information gathered and the habits formed will carry over into the after-school life of the child.

5. *Leisure time.* The out-of-school time of any person constitutes, of course, the largest part of his total time. It is important, therefore, that the individual be trained as far as possible to use his leisure time profitably and pleasantly. Here, again, through the interests awakened and appealed to in school life through Music, Athletics, Dramatics, Literature, Science, and other subjects, the child is prepared along lines which will be serviceable to him after he leaves school. He should be taught to evaluate the means and sources of spending leisure time to the end that leisure time may not be squandered, but used worthily.

6. *Command of the fundamental operations.* There are certain facts which every intelligent person is expected to know. It is the aim of the high school, therefore, to give boys and girls training in the tools of education. The pupil is expected to acquire the use of these tools in the elementary school through Reading, Writing, Arithmetic, Geography, and other elementary school subjects. The high school is under obligation also to see that the pupil does acquire the tools of learning, and be brought into pos-



session of those elements of Mathematics, Language, and other subjects which are pre-requisite to further study and learning.

7. *Character.* It is generally recognized that good character is necessary on the part of anybody who would live a worthwhile life. Ethical character, therefore, is very properly regarded as one of the objectives of secondary education, no matter what course or courses a given individual is pursuing. In order to be a good member of a home, of the community, of the state or nation, in order to be a good member of any social group or institution, it is necessary that the individual possess good traits of character. The high school can do much to secure the realization of this objective through instillation of ideas, the formation of right habits, and the inculcation of ideals.

The purpose of the public high school in North Carolina is to give the very best training possible to the largest possible number of boys and girls to the end that they may be prepared for the highest type of citizenship in the state.

## REQUIREMENTS FOR AN ACCREDITED HIGH SCHOOL

A *standard high school* as defined in the state law is as follows: "A school term of not less than 160 days; four years or grades beyond the seventh elementary grade; three teachers holding required certificates; not less than forty-five pupils in average daily attendance; a program of studies approved by the State Superintendent of Public Instruction; and such equipment as may be deemed necessary by the State Superintendent of Public Instruction to make the instruction beneficial to pupils: *Provided*, however, that in schools maintaining a nine months' term, meeting all other requirements and offering superior instruction, fewer than forty-five pupils in average daily attendance may be considered. (1923, c. 136, s. 8; 1927, c. 40, s. 1.)

"In each high school one teacher for the high school grades may be allowed for the ensuing year wherever the number of pupils in average daily attendance for the preceding year was twenty; two teachers may be allowed wherever the average daily attendance was thirty-five; three teachers may be allowed wherever the average daily attendance was forty-five; four teachers may be allowed wherever the average daily attendance was seventy-five; and one additional teacher may be allowed for each thirty additional pupils in average daily attendance." (1929, c. 243, s. 17.)

In the interpretation of this law the following suggestions and requirements are made for the development of a standard high school:

### 1. Teachers

Every teacher employed in a standard or accredited high school must hold a high school teacher's certificate issued by the Division of Certification. This requirement holds for all classes of schools, public and private, white and colored, urban and rural.

High school teachers' certificates issued as of July 1, 1931, and thereafter, will represent graduation from standard four-year colleges. These certificates will be issued on the basis of transcripts of college records, which show the professional credit and specialized work required for each certificate. Each applicant should meet the requirements in two or more teaching

fields. The subjects for which certification is granted will appear on the face of the certificate.

The present rules governing the issuance of high school teachers' certificates will remain and be in force for certificates issued as of July 1, 1929. Any applicant applying under the new rules prior to July 1, 1931, may receive the new certificate.

The requirements at present for the High School Principal's certificate are three years' successful experience on the High School Class A certificate and six semester hours credit in courses in Administration and Supervision.

For detailed information relative to certificates write the Division of Certification, State Department of Public Instruction, Raleigh, N. C.

## **2. Length of Term**

The length of term in a Group II, Class B School, which is the lowest class of standard high school, must be eight months or 160 days, exclusive of holidays. (See Section 15, Chapter 243, Public Laws of 1929.)

## **3. Length of Recitation Periods**

With an eight months' term, 160 days, recitation periods must be forty-five minutes in the clear in order that each course may be 120 clock hours or a unit of work. In arranging a daily schedule provision should be made for at least five minutes between recitation periods to allow for time spent in changing classes. The actual time spent in instruction during each recitation period must be forty-five minutes.

In some schools there is demand for the hour or sixty-minute period. When such a plan is discussed with the county superintendent and approved by him, and approved by the State High School Supervisor, the hour period may be adopted. When the daily schedule is arranged on this basis, there should be six such periods in the school day, and there must be at least five.

If the school is organized on the hour recitation basis, Science courses may be given five times (five hours) per week precisely as is done in purely academic subjects, two hours of which being devoted to laboratory work.

In some instances the longer period is adopted for purposes of supervised study. There is no objection to this arrangement, but such a plan should be well understood by the teachers and closely supervised by the principal.

## **4. Number of Units Required for Graduation**

At least sixteen standard units are required for graduation. A unit is defined as follows: A unit is the credit allowed for the satisfactory completion of a course pursued for thirty-two weeks or more per year with five recitation periods per week, and forty-five minutes per period. If the term is thirty-six weeks, recitation periods may be forty minutes in length. A unit of work is 120 clock hours. In estimating the sixteen units required for graduation such subjects as Elementary Arithmetic and Spelling should not be considered. When Arithmetic is offered in the eighth grade credit may be given toward graduation from any given school, but such credit will not be accepted by colleges in meeting entrance requirements.

The requirements for graduation differ somewhat for the various curricula. A definite statement of graduation requirements will be found in



the discussion of each curriculum in the chapter on High School Reorganization. With some exceptions the following are the requirements for graduation: English, 4 units; Mathematics, 2; Social Science (including History and Civics), 2; Foreign Language, 2; Science, 2; Elective, 4; Total, 16 units.

The number of units' credit given pupils coming from non-standard schools should be computed on a basis of 120 clock hours of recitation work per unit. In no instance should such pupils be graduated until they have done a full year's work in residence.

### 5. Average Daily Attendance

There must be at least forty-five pupils in average daily attendance in the lowest standard school. Such an average attendance permits the employment of three whole-time properly certified teachers.

### 6. Course of Study

A four year course of study must be provided. This means ordinarily the eighth, ninth, tenth, and eleventh grades. In some schools there are twelve grades and in some instances the eighth grade is regarded as a part of the junior high school. There is nothing to prevent the organization of a high school on the Junior-Senior basis. When an effort is made to organize on this basis it is suggested that the seventh and eighth grades be organized as a junior high school and the ninth, tenth, and eleventh grades as the senior high school. In schools where there are twelve grades it will be more convenient to organize on what is known as the 6-3-3 plan. The six year elementary school, a three year junior high school, composed of grades seven, eight, and nine, and a senior high school composed of grades ten, eleven, and twelve. In small high schools with three or four teachers and an average daily attendance of forty-five to seventy-five pupils it is not advisable, perhaps, to attempt to organize on the Junior-Senior basis.

Every school should be organized as suggested in the chapter on High School Reorganization. The curriculum adopted should conform to the suggestions made for three, four, five, and six-teacher schools beginning on page 55.

### 7. Equipment

A. LIBRARY.—A separate room with adequate furniture and supplies should be provided for the library which may be used also as a reading room. The following statement prepared by the State Library Commission should be helpful:

"*Location.* The library should be centrally located and well lighted, it should have an exposure that will admit plenty of sunshine. It should be near to or adjoining the study hall, and if practical connected with it by a door.

"*Size.* The reading room should be large enough to seat at least ten per cent of the total daily attendance of the school, with ample floor space to prevent confusion. A floor space of twenty-five square feet per reader is needed. Wall space for standard shelving should be provided not only for the present number of volumes but to allow for normal growth. In the very small school the minimum capacity should be equal to that of the average size classroom.

*"Librarian's Desk.* There should be a flat-top desk. It should be placed near the door. If built by a local firm, care should be exercised in planning drawers properly divided into compartments. A stock desk made by a library supply house is a good investment.

*"Pamphlet File.* Pamphlets, clippings, pictures and other material are an important supplement to books. The best and easiest way to keep these is in a vertical file. The material should be placed in folders marked with the subject and filed alphabetically. The legal size file is more satisfactory than the letter size; the finish should be the same as that of the other equipment. Even the smallest school will find a vertical file useful.

*"Bulletin Board.* A good bulletin board is a first essential. Celotex makes an inexpensive substitute for cork. The cost of this is less than six cents per square foot. One coat of walnut stain applied to the board makes an attractive background. The finish of the frame should match other equipment in color.

*"Additional Equipment.* As funds permit, rods for newspapers, atlas and dictionary stand, and catalog case containing required number of drawers, may be secured from any reliable dealer in library supplies. In the larger schools a typewriter is needed for making catalog cards, book cards, and for other uses.

*"Work Room.* A work room is essential for efficiency. It is needed for routine work and for the storage of back numbers of magazines and other material. Even the smallest library should provide a work room. The space may vary from a small alcove to a large room, but it should never be left out.

*"When possible to do so, provision should be made for running water. Built-in cupboards for supplies and storage space for magazines (10 or 12 inch shelving) are necessary.*

*"Finish for Woodwork and Furniture.* Dark colors should be avoided. Light oak is excellent for woodwork and equipment. The light finish is standard and has better wearing qualities than the dark finishes. Mahogany and dark finishes for wood trim or furniture are not recommended.

*"Walls and Ceiling.* Light buff walls and white ceilings have proved the most satisfactory finish for libraries. Picture moulding should be provided. Chair rails and wainscoting should be avoided.

*"Floors.* Cork carpet or battleship linoleum makes the most satisfactory floor covering. If a wooden floor is used, it should never be stained a dark color.

*"Lighting.* A principal requirement is plenty of natural light. For dark days and evening use, adequate ceiling lights hung sufficiently low should be installed.

*"Shelving.* Plain open wood shelving placed against the wall is recommended. When funds permit, standard shelving manufactured by a reliable supply house should by all means be purchased. The cost will be slightly more, but it will always look well and will in the end be economy. A builder cannot make it as well as a specialist in library equipment. The purchase of metal shelving is not advised.



"If funds are limited, very satisfactory shelving can be made locally if the following specifications are carefully followed:

Shelving to be not over 6 feet, 10 inches.

Each shelf to be 36 inches long. If made too long they sway from the weight of books.

Uprights between shelves should be solid, otherwise books will slide through.

Shelves should be 8 inches in depth.

Base 4 inches.

Avoid an elaborate cornice. A plain 2-inch cornice is best.

A simple way of making shelving adjustable is by the use of metal strips and brackets.

When shelving is built stationary the space between shelves should be 10 inches in the clear; no space should be less than 10 inches; any fraction of an inch less is too little. The bottom space in all sections should be 12 to 14 inches in the clear to provide for encyclopedias and other large books.

A light oak finish is best for shelving and equipment. Paint should never be used.

"Frequent faults of shelving are: Making the shelves too high, not allowing space enough between shelves, having projections along uprights, top and sides against which books will catch, having poor shelf supports, making shelving too wide, staining shelves a color that will never harmonize with any standard equipment that is purchased.

"*Tables.* Tables three by five feet and thirty inches high are found to be the most satisfactory. This size permits convenient aisles and allows free use of room. The elementary school library should provide low tables.

"*Chairs.* These chairs should be light, but strong, and without arms. Tip with rubber, if the floor is not covered.

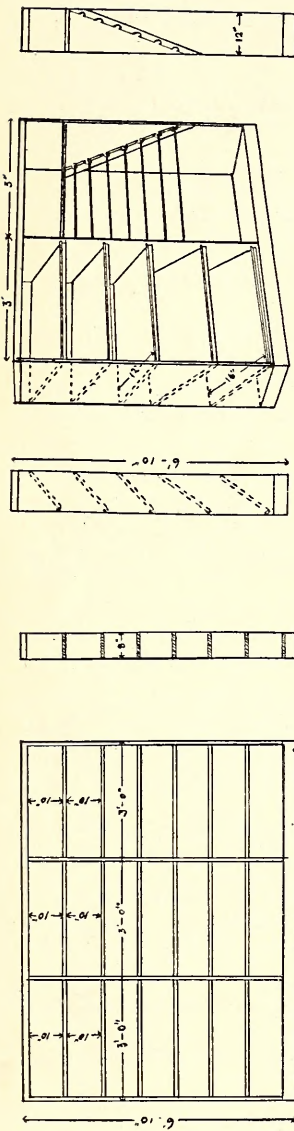
"*Magazine and Newspaper Racks.* Designs and specifications for magazines and number racks will be furnished on request, when it is desired to have them built locally.

"*State Aid.* The Library Commission, Raleigh, offers to schools aid in the selection of books, suggestions in regard to the purchase of furniture and equipment, furnishes outlines for instruction in the use of books and libraries, assists in organization."

Regulations regarding state aid in the establishment of school libraries may be secured from the county superintendents.

*Distribution of Books.* There must be in the lowest standard high school at least 300 library volumes, of distinctively high school grade. The books should be distributed as follows:

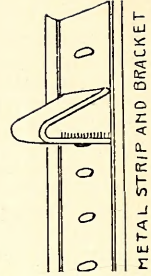
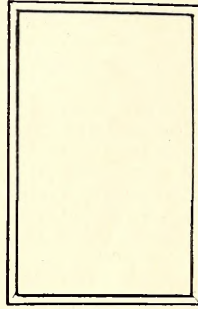
- (1) Fifty volumes of standard fiction.
- (2) Fifty volumes of standard literature in the form of essays, orations, addresses, short stories, dramas.
- (3) At least ten of the books suggested on agriculture and home economics.
- (4) Seventy-five volumes of history and biography.
- (5) Twenty-five volumes of geography and travel.
- (6) Good editions of at least twenty-five of the leading British and American poets.
- (7) The reference books and periodicals listed below. The names of publishers and prices can be obtained from Educational Publication No. 96, *LISTS OF BOOKS FOR HIGH SCHOOL LIBRARIES*. This



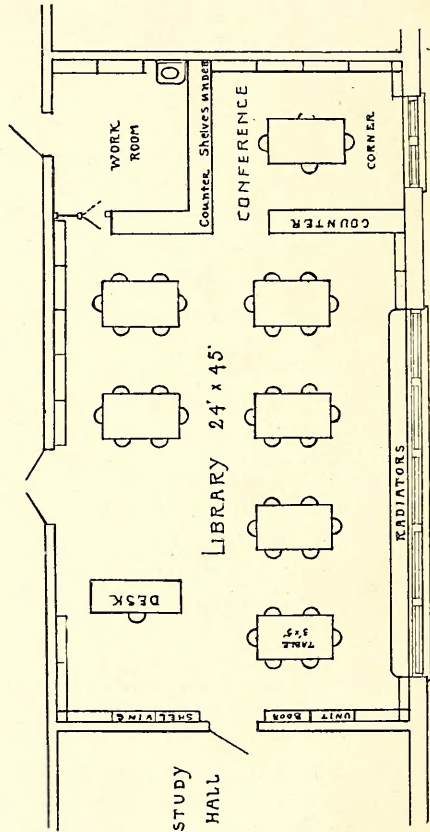
MAGAZINE AND NEWSPAPER RACK

SIDE ELEVATION

ADJUSTABLE BOOK SHELVING



METAL STRIP AND BRACKET



FLOOR PLAN FOR SMALL SCHOOL LIBRARY

Approved by J. J. Blair, Division of Schoolhouse Planning



bulletin contains, also, good suggestions regarding library organization and administration.

Encyclopedia Americana or New International Encyclopedia

Webster's New International Dictionary or Funk's New Standard Dictionary

A good language dictionary for each language taught

World Almanac (Annual)

United States Congress, Official Congressional Directory.

A good school atlas

Periodicals as follows:

Current Events or Current History

Harper's Magazine, Literary Digest, National Geographic Magazine, Outlook, Popular Mechanics or Scientific American, Review of Reviews or World's Work, Youth's Companion, and one daily newspaper.

Schools offering Agriculture or Home Economics should have, in addition to the above, two or more magazines selected from the lists suggested on pages 17 and 18 of the Library bulletin. Substitutions of good magazines of the same type as those suggested above will be permitted.

**B. MAPS.**—To make the teaching effective, it is necessary to have not only good text-books but also to have good apparatus, such as maps, charts, lantern slides, pictures, and specimens. The requirements for maps for use in connection with physical, general or commercial geography, general science, history, and literature are as follows:

#### MINIMUM LIST

*I. Political Maps:* United States, North America, South America, Europe, Asia, Africa, Australia, World.

Companies: Nystrom: Whitbeck-Finch Series, Atwood-Regional Political, Educational Political Series; Rand McNally: Goode Series, Columbia and Universal Series; Denoyer-Geppert: New Political Maps.

*II. Physical Maps:* United States, North America, South America, Europe, World.

Companies: Rand McNally: Goode Series; Denoyer-Geppert: J Series of Physical Maps; Nystrom: Bathy Orographical.

*III. Blackboard Outline Maps:* 1. One map reversible: United States and World. 2. Europe—Companies for reversible map and Europe: Rand McNally; Nystrom: Royal Series; Denoyer-Geppert: Cartocraft Maps. 3. North Carolina—Companies: Rand McNally, Nystrom.

In meeting the requirements for accredited rating under item III, schools may purchase either five blackboard outline maps or three of the blackboard outline and two of the Historical series.

#### SUGGESTED LIST

*Rainfall and Population*—World, Denoyer-Geppert: Phillips Comparative Wall Atlas Maps.

*Rainfall*—United States, Rand McNally: Van Cleff Series; Nystrom.

*Temperature, Rainfall, and Vegetation*—World, Nystrom: Oxford Series; Rand McNally.

*Ancient History*—Denoyer-Geppert: Breasted-Ruth-Harding Ancient History Maps—B 3 Oriental Empires, B 5 Ancient Greece, B 16 Roman Empire.

Rand McNally: Westermann Classical and Historical Series—Ancient Greece, The Roman Empire.

Nystrom: Webster-Knowlton-Hazel Ancient History Maps—AH 4 Oriental Empires, AH 8 Ancient Greece and the Aegean, AH 13 Roman Empire.

4 *Modern European History*—Denoyer-Geppert: Breasted-Ruth-Harding Series: H 8 Medieval Commerce, H 13 Europe, 1740; H 14 Discoveries and Colonization, H 15 Napoleon, H 16 Europe, 1815; H 18 Industrial England, H 19 Modern Italy, H 20 Modern Germany, H 21 The Balkans, H 22 World, 1914; H 24 Economic Europe, H 25 Peoples of Europe.

5 *Medieval and Modern History*—Nystrom: Webster-Knowlton-Hazel Medieval and Modern History Maps: MM 4 Economic Europe in the Middle Ages, MM 6 Age of Discovery, MM 10 Europe After the Peace of Utrecht, MM 11 Colonial Powers, 1783; MM 12 Europe on the Eve of the French Revolution, 1789; MM 13 Napoleonic Empire, MM 14 Europe After the Congress of Vienna, 1815; MM 21 Rise and Decline of the Ottoman Empire, Balkan States, MM 24 Industrial Revolution in England, MM 25 Physical and Economic Europe, 1921; MM 26 Peoples of Europe, MM 15 Europe in 1671.

7 *American History*—Nystrom: Sanford-Gordy American History Maps: SG 5 Spanish and French Explorers, SG 7 Early Colonies, SG 8 Division of North America Among the Nations, SG 10 The Movement Westward, SG 11 Growth of the United States, 1800-1820—War of 1812; SG 12 Slavery in the United States, 1821; SG 13 Internal Improvements, 1825-1850; SG 14 The Approach of the Civil War, SG 15 The Expansion of the American Nation, 1783-1860; SG 17 Growth of the Great West, SG 18 Population and Industries, SG 20 The United States as a World Power, 1898-1925—World War Adjustments.

Denoyer-Geppert: Hart-Bolton American History Maps: A6 Partition of America, 1700 and 1763; A7 Colonial Commerce and Industries, A12 Territorial Acquisitions, 1776-1866; A13 Land and Water Routes, 1829-1860; A18 Western Statehood and Land Grants, A19 Lines of Transportation, A23 United States in the Caribbean, A27 Population Density, 1920; A39 Woman Suffrage, A40 Anti-Liquor Laws, A41 Immigration of Various Peoples, A42 Source of Immigrants.

8 *Classical and Historical Series*—Rand McNally: Westermann Classical and Historical Series: 1, Barbarian Invasion of Western Europe; 2, Medieval Commerce and Its Trade Routes; 3, Map of Europe in 1715; 4, Europe in 1815; 5, The World in 1914; 6, Europe in 1922.

C. SCIENCE LABORATORY.—The Reorganization Program provides for at least four sciences, namely: General Science, Biology, Geography (Physical, Industrial, Commercial), and Physics, coming in grades 8, 9, 10 and 11, respectively. In three-teacher high schools Geography and Physics may be given to both 10th and 11th grades in alternate years.

In schools having as many as six teachers Chemistry may be introduced as an elective in the 10th grade. Schools having fewer than six teachers that were equipped for teaching Chemistry prior to the introduction of the



Reorganization Program may offer Chemistry in the 11th grade in lieu of Physics.

There must be set apart for laboratory work at least one room which should have the necessary furniture and supplies. Suggestions regarding furniture and minimum laboratory apparatus lists follow:

*Tables.* For teacher—One demonstration table, 60 in. long, 30 in. wide, 34 in. high. Should have drawers, enameled sink, and removable balance rods.

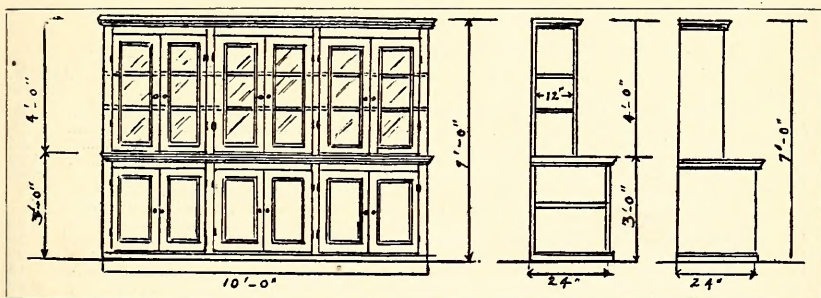
For pupils—A sufficient number of tables with balance rods and stools or chairs to accommodate largest laboratory section. The most popular sizes for tables are: 4-pupil capacity—72 in. long, 42 in. wide, 30 to 32 in. high; 2-pupil capacity—60 in. long, 30 in. wide, 30 to 32 in. high.

Although it is not undesirable for these tables to have drawers it is not necessary, as apparatus can be stored more satisfactorily in a separate cabinet. Tables should be heavy and rigidly constructed, the top at least  $1\frac{1}{2}$  inches thick and well put together.

*Chairs or Stools.* There should be a number of chairs or stools sufficient to accommodate the largest laboratory section. In systems where there is congestion and one room has to be used for both recitation and laboratory purposes, chairs (without arms) should be supplied; otherwise, stools would be more satisfactory. Height of chairs, 18 inches; stools, 20 inches.

*Storage Cabinet.* There should be a storage cabinet in each school for laboratory apparatus. In most systems the one described below would be satisfactory. In the larger schools, however, a cabinet with additional sections should be provided.

PLAN FOR A CABINET FOR SCIENCE EQUIPMENT



Dimensions for cabinet:

- 10 ft. long.
- 7 ft. high.
- 36 in., height of lower section.
- 24 in., width (outside) lower section.
- 12 in., width (outside) upper section.
- 2 vertical partitions thru middle of cabinet.
- 2 shelves across units of upper section.
- 1 shelf in left unit of lower section; none in the other two units.
- Wood doors on lower section; glass doors on upper sections.

*Water.* Running water should be supplied in all laboratories. If possible there should be spigots and sinks for teacher's demonstration table and for each pupil's table; however, one sink connecting every two tables for pupils can be made satisfactory.

*Gas.* Schools offering only General Science, Biology, Geography, and Physics have found that alcohol lamps supply a sufficient amount of heat. Where Chemistry is taught, gas should be provided.

*Science Laboratory Apparatus.* There appears below minimum lists of laboratory apparatus for each science offered in an accredited high school. For list of reputable dealers, see page 24.

#### GENERAL SCIENCE—INDIVIDUAL APPARATUS

Minimum Requirement: One set for each group of 4 pupils

Quantity	Description	Approx. Price
1	Meter Stick, graduated to both mm and $\frac{1}{8}$ "	\$ .35
1	Battery Jar, 5" high, 4" dia.	.45
1 env.	Co-ordinate Paper, metric ruled in cm and 2mm, 24 sheets in env., $7\frac{3}{4}" \times 9\frac{3}{4}"$	.15
1	Calorimeter, brass, 7 cm high, 5 cm dia.	.60
1	Soft Iron Horseshoe Core, 6.5 cm. long U-shaped	.12
2	Bar Magnets, square, 15x11 cm.	.50
1	Mirror, plane, 4x5 cm.	.15
2	Beakers, with lip, capacity 250 cc.	.42
1	Blow Pipe, brass, plain, 10"	.24
2	Bottles, wide mouth, 8 oz.	.40
1	Bottle, gas generating, capacity $\frac{1}{2}$ pt.	.60
1	Flask, flat bottom, 250 cc capacity	.23
1	Gauze, iron wire, 20 mesh, $5" \times 5"$	.10
1	Glass Plate, circular, 8 cm dia.	.09
1	Lamp, alcohol, round, glass, 4 oz.	.55
	(If gas is available specify: 1 Bunsen Burner, new form, with needle valve gas control, \$0.65; 3 ft. Rubber Tubing, white, $\frac{1}{4}"$ dia., 1/16" wall, \$0.42.)	
2	Rubber Stoppers, 2-hole, to fit 250 cc flask	.20
3 ft.	Rubber Tubing, white $3/16"$ dia., $3/64"$ wall	.36
1	Support, ring stand, with 2 rings	1.00
12	Test Tubes $6" \times \frac{3}{4}"$	.35
1	Thermometer, engraved scale, $-10^{\circ}$ to $110^{\circ}$ C, length 12"	1.25
	Total	\$ 8.11

#### GENERAL SCIENCE—CLASSROOM APPARATUS

Minimum Requirement: One set

Quantity	Description	Approx. Price
1	Osmose Apparatus, simple form, including thistle tube membrane	\$ .60
1	Scale Pan, Aluminum pan, 14 cm dia.	.35
1	Single Pulley, 5 cm in dia.	.35
2	Triple Pulleys, 5 cm in dia.	1.30
1	Rotator, Hand Form, driving ratio 8 to 1	9.50
1	Rotator, Accessories Set consisting of 1 Centrifugal Hoop, 1 Centrifugal Separator, 1 Glass Globe, 1 Centrifugal Force Apparatus, 1 Governor and 1 Combination Siren and Color Disc	20.00
1	Hydrometer Jar, 30 cm high, 5 cm dia., with lip	.50
1	Lead Sinker, with hook	.20
1	Water-Proof Wood Pencil	.10
1	Barometer Tube with Stopcock or Boyle's Law Tube	2.50
1	Thermometer, standard, $-20^{\circ}$ to $120^{\circ}$ F	1.00
1	Air Pump, exhaust and compression	4.50
1	Air Pump Plate, Lathe-turned surface, 21 cm dia.	6.00
1	Bell Jar, straight form, glass stoppered, capacity $\frac{1}{2}$ gal.	2.65
2	Rubber Dam	.25
1	Rubber Balloons, small	.10
1	Ball and Ring to show expansion due to heat	1.50
1 lb.	Lead Shot	.30
1 pkg.	Blue Print Paper, pkg. of 24 sheets $4" \times 5"$	.20
6	Dry Cells, (dry battery), standard size, 1.5 volts 25 amperes on short circuit.	3.00
1	St. Louis Motor, all metal base, spring clip magnet holders, flat adjustable copper brushes	3.50
1	Electromagnet Attachment for St. Louis Motor, essential for complete dynamo demonstrations	1.25
1	Bell, electric, dia. of bell $2\frac{1}{2}"$	.75
2	Push Buttons, stamped metal, bronze finish	.36
1	D'Arsonval Galvanometer, all metal frame, mounted on tripod with leveling screws	6.25



1	Christmas Candles, colored, 24 in box.....	.20
1	Balance, Harvard Trip, agate bearings, beam weighs 10 g to 0.1 g sensibility 5 cg .....	12.00
1	Weights, brass, in wood block, 1 g to 500 g, including 1 g, (2) 2 g, 5 g, 10 g, (2) 20 g, 50 g, 100 g, (2) 200 g and 500 g.....	5.25
1	Spring Balance, double scale, capacity 64 oz. in 1 oz. div. and 2000 g in 25 g div. ....	.85
1	Clamp, burette .....	.55
1 lb.	Glass Rod, 3/16" dia.....	.85
1 lb.	Glass Tubing, outside dia. 3/16".....	.70
1 lb.	Annunciator Wire, copper, D. C. C., No. 20.....	.90
1 spool	Steel Wire, 4 oz. spool No. 16.....	.10
Total.....		\$88.41

### GENERAL SCIENCE—CHEMICALS

#### Minimum Requirement: One set

Quantity	Description	Approx. Price
1 lb.	Acid Hydrochloric Technical Concentrated.....	\$ .40
1 lb.	Acid Sulphuric Technical Concentrated.....	.55
1 lb.	Ammonium Nitrate Pure Granular.....	.50
1 lb.	Copper (ic) Sulphate Technical Crystals.....	.25
1 lb.	Iron Metal Filings Fine.....	.25
1 lb.	Manganese Dioxide Native Powder.....	.25
1 lb.	Mercury Metal Refiltered .....	2.75
1 oz.	Phosphorus Yellow Sticks.....	.40
1 lb.	Potassium Chlorate U.S.P. Crystals.....	.30
4 oz.	Potassium Permanganate U.S.P.....	.25
1 oz.	Silver Nitrate C.P. ....	.90
1 lb.	Sulphur Flowers Sublimed .....	.25
1 lb.	Zinc Metal Technical Mossy .....	.40
Total.....		\$ 7.45

### BIOLOGY—LABORATORY APPARATUS

#### Minimum Requirement for a Class of Twenty

Quantity	Description	Approx. Price
1	Microscope, compound, 2 eyepieces, 2 objectives, double circular nosepiece, Magnifications of 50, 100, 215 and 430 diameters.....	\$ 74.50
1	Hydrometer Jar, 30 cm high, 5 cm dia., without lip.....	.50
1	Bell Jar, swelled form, knob top, capacity 3 gal.....	6.75
2	Beakers, with lip, capacity 150 cc.....	.38
1	Beaker, with lip, capacity 250 cc.....	.21
6	Bottles, wide mouth 8 oz.....	1.20
6	Bottles, wide mouth for students' tables, 4 oz.....	2.40
24	Bottles, collecting, shell vials, No. 5 capacity 34 cc.....	1.20
30	Corks, quality XX No. 10, 1" dia.....	.39
10	Corks, quality XX No. 20, 1 1/8" dia.....	.35
10	Corks, quality XX No. 15, 1 5/16" dia.....	.20
10	Corks, quality XX No. 8, 7/8" dia.....	.10
2	Dishes, evaporating, Coors porcelain, No. 00A, capacity 70 cc.....	.24
6	Flasks, flat bottom, 250 cc capacity.....	1.38
2	Funnel Tubes, thistle top, straight stem 30 cm long.....	.30
1	Gauze, iron wire, 20 mesh, 4"x4" .....	.05
12	Glass Rods, stirring, 8"x3/16".....	.50
1 lb.	Glass Tubing, outside dia. 1/4".....	.70
1	Graduate Cylindrical, graduated up and down, 100 cc by 1 cc.....	.80
1	Lamp, Alcohol, round, glass, 8 oz.....	.70
	(If gas is available specify: 1 Bunsen Burner, new form with needle valve gas control \$0.65; 3 ft. Rubber Tubing, white, 1/4" dia., 1/16" wall, \$0.42.)	
1	Lactometer, common, graduated 0 to 120°.....	.75
2	Rubber Stoppers, 2-hole to fit 4 oz. bottle.....	.30
2	Rubber Stoppers, 1-hole to fit 4 oz. bottle.....	.30
6 ft.	Rubber Tubing, white, 1/4" dia., 1/16" wall.....	.84
1	Support, ring stand, with 3 rings.....	1.50
12	Test Tubes, 6"x3/4" .....	.35
2	Test Tubes, Pyrex, 100x13 mm.....	.12
1	Thermometer, engraved double scale, -10° to 220° C and 30° to 400° F, length 14" .....	2.50
10	Tripod Magnifiers, double lens, wide field.....	8.00
72	Microscopic Slides, blank, glass, 25x75 mm.....	1.15
1/2 oz.	Cover Glasses, round, No. 2, dia. 18 mm.....	.90
5	Dishes, petri, double culture dishes, 100 mm dia.....	3.00
1	Section Razor, both sides flat for making microscopic sections.....	2.00
10	Dissecting Sets including Scalpel, Forceps, Scissors, 2 Dissecting Needles and 6" Ruler in Leatherette Case @ \$1.75.....	17.50
1	Set of 25 Prepared Botanical Slides.....	8.50
1	Set of 25 Prepared Zoology Slides.....	8.50
Total.....		\$149.96

CHEMICALS FOR BIOLOGY  
Minimum Requirement: One set

Quantity	Description	Approx. Price
1 lb.	Acid Hydrochloric Technical Concentrated .....	\$ .40
1 lb.	Acid Nitric Technical Concentrated .....	.65
4 oz.	Agar Agar Shreds .....	.80
1 pt.	Alcohol Ethyl Denatured 95% .....	.40
1 lb.	Calcium Carbonate Marble Chips .....	.20
4 oz.	Calcium Phosphate Dibasic Precipitated .....	.25
1 lb.	Copper (ic) Sulphate Technical Crystals .....	.25
1 lb.	Dextrose Pure Granular .....	.30
4 oz.	Ether Sulphuric U.S.P.X. ....	.25
1 oz.	Iodine Solution in Potassium Iodide & Water .....	.25
1 lb.	Manganese Dioxide Native Powder .....	.25
1 oz.	Pepsin U.S.P. Powder .....	.45
4 oz.	Potassium Chlorate U.S.P. Crystals .....	.20
4 oz.	Potassium Cyanide Pure Granular .....	.50
1 oz.	Potassium Iodide C.P. ....	.65
1 lb.	Sodium Chloride Fine White .....	.20
4 oz.	Sodium Hydroxide C.P. Sticks .....	.65
1 lb.	Sulphur Flowers Sublimed .....	.25
1 vial	Test Paper Litmus Blue .....	.10
1 vial	Test Paper Litmus Red .....	.10
1 lb.	Zinc Metal Technical Mossy .....	.40
Total .....		\$ 7.50

GEOGRAPHY—(PHYSICAL, INDUSTRIAL, COMMERCIAL)

As an aid in the teaching of Geography there should be a museum which should include the following items: (a) Photographs, half-tones, and any attractive pictures. (b) Collections of illustrated pamphlets, magazines and newspapers, such as those issued by the Bureau of the Federal Government, Washington, D. C.; publications of the U. S. Geological Survey, the Department of Agriculture, and the Biological Survey. Weather Bureau reports are sent out by the Department of Agriculture, Washington, D. C. (c) Collections of mineral resources—North Carolina has a great variety of minerals, and a good supply can be collected at slight expense. (d) Advertising materials of all kinds—materials such as folders, guides, and posters may be secured from the various railway systems of the country. Railroads operating in North Carolina: The Southern, Seaboard Air Line, Atlantic Coast Line, Norfolk-Southern, and others should be asked to furnish all available materials. Write to the following State Departments, Raleigh, N. C., for materials suggested:

State Highway Commission for large wall map of the highway system, and also for small size maps.

Corporation Commission for map of North Carolina.

Agriculture Department for various publications of the department.

Topographical maps should be ordered from the United States Geological Survey, Washington, D. C. Prices for these maps are: 100 maps or more, 6 cents each; less than 100, 10 cents each. These topographic maps illustrate youthful drainage, old age drainage, mature drainage, rejuvenated regions, river terraces, braided channels, natural levees, flood plains, distributaries, deltas, alluvial plains, gorges, meanders, oxbow lakes, drowned valleys, active glaciers.

The following topographic maps showing the effects of continental ice sheets may be secured also: terminal moraine, ground moraine, changes in drainage systems, glacial lakes and kettle holes, volcanoes, mountains, plateaus and mesas, dissected plateaus, coast lines.



Order from U. S. Geological Survey, Washington, D. C., the following:

- (a) A two-sheet wall map of the United States with or without contours;
- (b) Base maps of the United States, 18x28 inches; 11x16 inches, or 8½x12 inches;
- (c) Portfolio of National Parks.

The United States Bureau, Washington, D. C., will furnish blank weather maps. The map of the United States issued by the General Land Office, Department of the Interior, Washington, D. C., should by all means be secured.

Every Geography classroom or laboratory should have physical maps. For a satisfactory list see page 13.

A supply of mineral and rock specimens for laboratory use should be had. The following list is recommended and those marked (\*) are prescribed:

*Quartz crystals	*A commercial iron ore	Quartzite
Agate	*A commercial copper ore	*Mica
*Sandstone	A commercial lead ore	*Asbestos
*Glass Sand	A commercial zinc ore	*Bituminous Coal
*Feldspar	*Limestone	*Anthracite Coal
*Slate	*Marble	Peat
*Shale	Calcite	Lignite
Clay	Mineral Chalk	*Petroleum
*Rock Salt	*Granite	*Obsidian
		*Pumice Stone

#### GEOGRAPHY—EQUIPMENT

Minimum Requirement: One set

Quantity	Description	Approx. Price
1	Barometer Tube with Stopcock or Boyle's Law Tube.....	\$ 2.50
1	Barometer, mercurial, Metric and English scales with vernier, mercury column entirely exposed .....	18.00
1	Mason's Hygrometer, wet and dry bulb thermometers and cistern.....	4.25
1	Compass, brass case, engine-divided scale, agate bearing, 50 mm dia.....	1.50
1	Terrestrial Globe, fixed meridian 12" .....	8.90
1 pkg.	Filter Paper, 100 sheets, 12.5 cm dia.....	.17
2	Funnels, glass, 75 mm dia.....	.68
1	Lamp, alcohol, round, glass, 4 oz.....	.55
1	Support, test tube, 13 tube.....	.90
36	Test Tubes, 6"x5" .....	1.05
1	Thermometer, engraved double scale, -10° to 110°C and 10° to 220° F, length 12" .....	2.00
100 sht.	Straw Board, size 19"x26" .....	3.00
10 lb.	Plastine, light brown, pliable modeling material for making demonstration models, 5 lb. packages .....	3.30
1	Washington School Collection of Rocks and Minerals including 20 rocks and 20 minerals all labeled in compact display case.....	6.50
1 lb.	Mercury Metal Refiltered .....	2.75
1 lb.	Acid Hydrochloric Technical Concentrated.....	.40
Total.....		\$56.45

If funds are available the Barograph and Thermograph should be provided for experiments in Geography and Physics. The combined cost of these instruments for school use would be approximately \$60.00.

## PHYSICS

Minimum Requirement: One set

Quantity	Description	Approx. Price
1	Caliper, vernier, Metric and English, reads to 14 cm by 0.1 mm and $5\frac{1}{2}$ " by $1/28$ "	\$ 2.50
1	Meter Stick, graduated to both mm and $\frac{1}{8}$ "	.35
1	Protractor, brass, $4\frac{1}{2}$ " dia.	.25
1	Osmose Apparatus, simple form, including thistle tube and membrane	.60
1	Composition-of-Force Board, circular, all metal, including 3 spring balahces.	4.50
1	Single Pulley, 5 cm in dia.	.35
2	Triple Pulleys, each pulley 5 cm in dia.	1.30
1	Inclined Plane, all metal form	7.75
1	Hall's Carriage, frictionless cone bearings, length 17.5 cm.	1.50
1	Hydraulic Press, working model of glass	2.25
1	Bucket and Cylinder for proving Archimedes' Principle	1.65
1	Hydrometer, Universal, both light and heavy liquid scale	1.35
1	Specific Gravity Bottle, 25 cc adjusted	1.25
1	Hydrometer Jar, 30 cm high, 5 cm dia. with lip	.50
1	Aluminum Cylinder, with hook, 7.5 cm high, 2.5 cm dia.	.65
1	Barometer Tube with Stopcock or Boyle's Law Tube	2.50
1	Steam Generator, (Apparatus), one-piece boiler, no solder, no rubber tubing, standard steam-boiler water gauge	4.50
1	Linear Expansion Apparatus, with micrometer screw attachment	8.50
1	Mechanical Equivalent of Heat, 1 meter long	.30
2	Calorimeters, drawn polished aluminum 12.5 cm high, 7 cm dia.	1.70
1 lb.	Lead Shot	.30
2	Bar Magnets, square 15x1x1 cm	.50
1	Horseshoe Magnet, 10 cm long	.30
1	U-Magnet, length 14 cm	.60
1	Magnetic Needle, mounted, 15 cm long	.65
1	Compass, brass case, engine-divided scale, agate bearing 50 mm dia.	1.50
2	Compasses, small size indicating compass, 10 mm dia.	.30
2	Friction Rods, hollow glass 25 x 1.3 cm	.40
2	Friction Rods, vulcanite, 25 x 1.3 cm	.80
1	Electrophorous, small disc 10 cm dia., hard rubber plate, 20x20 cm	1.50
1	Electroscope, flask form, with aluminum leaves	.90
1	Demonstration Students' Battery, with tumbler, porcelain top porous cup, and 13 elements	1.75
4	Daniell Batteries, closed circuit cell, gallon size	12.00
1	St. Louis Motor, all metal base, spring clip magnet holders, flat adjustable copper brushes	3.50
1	Electromagnet Attachment for St. Louis Motor, essential for complete dynamo demonstrations	1.25
1	Telegraph Set, complete sending and receiving Galvanoscope, porcelain compass block, with three coils of 1, 10 and 40 turns	1.75
1	Resistance Box, total resistance 111 ohms with coils 0.1, 0.2, 0.3, 0.4, 1, 2, 3, 4, 10, 20, 30, and 40 ohms	12.00
1	Wheatstone Bridge, Single Wire, Student Form mounted on steel rods with Bakelite Cross Rods	6.50
2	Bells, electric, dia. of bell $2\frac{1}{2}$ "	1.50
2	Push Buttons, stamped metal, bronze finish	.36
1	D'Arsonval Galvanometer, all metal frame, mounted on tripod with leveling screws	6.25
1	Volt-Ammeter, D. C., full 5" scale, range 10 volts and 10 amperes in 0.1 div.	18.00
1	Glass Tube, resonance, 4x45 cm	.90
2	Lenses, double convex, 38 mm dia., 10 cm focus	.80
1	Lens, double convex, 50 mm dia., 50 cm focus	.50
1	Lens, double concave, 38 mm dia., 10 cm focus	.50
1 set	Demonstration Lenses, 38 mm dia., set of 6	1.75
1	Metal Support, with 4 candle holder	.85
1	Photometer, Bunsen's, including meter stick, supports, gas burner, candle holder, Bunsen Box with screen	4.25
12	Candles, paraffin, sixes	.50
1	Candle, standard sperm, 12 cm long	.45
1	Optical Bench, including meter stick, supports, lens support, screen, screen support, and object marker	1.00
1	Lens Support, for 5 cm lenses with support to fit meter stick	.12
1	Mirror or Lens Support, to fit meter stick	.18
1	Balance, Harvard Trip, agate bearings, beam weighs 10 g to 0.1 g, sensibility 5 cg	12.00
3	Spring Balances, double scale, capacity 64 oz. in 1 oz. div. and 2000 g in 25 g div.	2.55
1 set	Weights, brass in wood block, 1 g to 500 g including 1 g, (2)2 g, 5 g, 10 g, (2)20 g, 50 g, 100 g, (2)200 g and 500 g	5.25
2	Bunsen Burners, new form, with needle valve control (If no gas is available specify: 3 Alcohol Lamps, \$1.80.)	1.30
1	Clamp, condenser, large	.60
1	Clamp, holder	.80
1	Condenser, Liebig's, glass 400 mm long	1.20
1	Graduate Cylindrical, graduated up and down, 100 cc by 1 cc	.80
2	Supports, ring stand, with 3 rings	3.00
1	Thermometer, engraved double scale, $-10^{\circ}$ to $110^{\circ}$ C, and $10^{\circ}$ to $220^{\circ}$ F, length 12"	2.00
Total		\$161.91



## CHEMICALS FOR PHYSICS

Quantity	Description	Approx. Price
1 lb.	Acid Hydrochloric Technical Concentrated .....	\$ .40
1 lb.	Acid Nitric Technical Concentrated .....	.65
1 lb.	Acid Sulphuric Technical Concentrated .....	.55
1 lb.	Aluminum Metal Pellets .....	.75
5 lb.	Copper (ic) Sulphate Technical Crystals .....	.80
1 lb.	Mercury Metal Refiltered .....	2.75
5 lb.	Zinc Sulphate Pure Crystals .....	.75
Total.....		\$ 6.65

## PHYSICS—DEMONSTRATION AND GENERAL STOCK LIST

Highly desirable but not prescribed

Quantity	Description	Approx. Price
1	Rotator, Hand Form, driving ratio 8 to 1.....	\$ 9.50
1	Rotator, Accessories Set consisting of 1 Centrifugal Hoop, 1 Centrifugal Separator, 1 Glass Globe, 1 Centrifugal Force Apparatus, 1 Governor and 1 Combination Siren and Color Disc.....	20.00
1	Lift Pump, working model of glass, 37 cm long.....	1.50
1	Force Pump, working model of glass, 37 cm long.....	1.50
1	Aneroid Barometer, Metric and English Scales for altitudes up to 3,500'.....	10.00
1	Air Pump Accessories Set including: 1 Madgeburg Hemisphere, 1 Baroscope, 1 Tall Form Bell Jar, 1 Vacuum Gauge, 1 Bell in Vacuo, 1 Guinea and Feather Tube, 6 Bursting Squares and 1 Wire Guard.....	42.50
1	Air Pump with plate and cylinder mounted on base 28x60 cm.....	30.00
1	Ball and Ring, to show expansion due to heat.....	1.50
1	Electrolysis Apparatus, length over all 40 cm.....	5.00
1	Galvanometer, Lecture Table, double horseshoe magnets, D'Arsonval movement, resistance of coil 5 ohms, sensitivity 0.5 mehothms.....	22.50
1	Rheostat, slide wire form, 100 ohms resistance.....	6.00
1	Rheostat, slide wire form, 12 ohms resistance.....	6.00
1	Lamp Board Rheostat, for 110 volt circuit, includes six lamps from 4 to 50 candle power, individual switches, fuse box, knife switch, lamp board and plug.....	20.00
(Where commercial current is not available specify: 1 Lamp Board Rheostat without lamps, \$10.00, and 5 Incandescent Lamps, 6 volts, \$3.25.)		
1	Photometer, Bunsen, mounted in light tight box, with eye screen above photometer carriage, designed for daylight operation.....	32.50
1	Lens Holder, screw form, for holding lenses up to 100 mm in dia., mounted on rod 15 cm long and 10 cm in dia.....	1.75
1	Optical Disc, etched metal dia., complete with lenses.....	22.50
6	Beakers, with lip, capacity 250 cc.....	.81
1	Blow Pipe, brass, plain, 10".....	.24
1	Clamp, Stoddard's test tube.....	.14
1	Condenser, Liebig's, glass, 400 mm long.....	1.20
1 pkg.	Corks, quality XX, assorted, 1 gross, Nos. 0 to 11, $\frac{3}{8}$ " to 1 $\frac{1}{16}$ " dia.....	.65
1 set	Cork Borers, brass set of 3.....	.50
3	Flasks, flat bottom, 500 cc capacity.....	.81
3	Flasks, round bottom, 250 cc capacity.....	.63
1	Funnel, glass, 75 mm dia.....	.34
2 lb.	Glass Tubing, outside dia. $\frac{1}{4}$ ".....	1.40
2	Rubber Stoppers, 2-hole No. 10.....	.60
2	Rubber Stoppers, 2-hole No. 8.....	.40
2	Rubber Stoppers, 2-hole No. 6.....	.20
2	Rubber Stoppers, 2-hole No. 4.....	.20
12	Rubber Stoppers, 2-hole No. 2.....	.48
12 ft.	Rubber Tubing, white $\frac{1}{4}$ " dia., 1/16" wall.....	1.68
1	Support, test tube, 25 tube.....	1.25
48	Test Tubes, 6"x $\frac{3}{4}$ ".....	1.40
Total.....		\$245.68

## PHYSICS—ADDITIONAL RECOMMENDED APPARATUS

The following items are not made a part of the minimum list. They do, however, represent a very desirable list of additional items that ought to be in every Physics laboratory as soon as growth and expansion will permit of installing these instruments. They are instruments of precision made with great care, of the best materials and workmanship, and are types of in-

struments that have been used in leading educational laboratories for many years past.

Quantity	Description	Approx. Price
1	Inclined Plan and Car, wire form.....	\$ 4.50
1	Torsion Pendulum, complete with beam, wire, 80 cm rod, and tripod.....	8.50
1	Resonance Pendulum.....	13.00
1	Hygrometer, or "Sling" Psychrometer quick reading.....	8.00
1	Heating Coil, attachment for calorimeter-coil is calibrated to 110 volts.....	6.00
1	Laboratory Gas Meter, constant pressure form, complete with gas cocks, gauge, weights and weight hanger.....	60.00
1	Lifting Magnet, commercial form of electromagnet.....	4.25
1	Declination and Inclination Needle, inclination disc 11.6 cm in dia. magnetic needle, 8.5 cm in dia.....	37.50
1	Ampere's Frame, including 5 aluminum wire frames of different shapes.....	12.50
1	Alternating Current Demonstration Apparatus, with 6 field coils, D. C. armature, mounted magnetic needle, aluminum rotor, and 12 connecting cords.....	65.00
1	Completely Dissectible Dynamo, wound for 12 volts and 72 watts.....	80.00
1	Choke Coil, simple form, for demonstrating impedance.....	12.00
1	Tangent Galvanometer, Precision form, engine-divided scale, 360° in 2° div., with 4 separate coils.....	37.50
1	Resistance Box and Wheatstone Bridge, postoffice type, total resistance 1111 ohms, coils of 0.1, 0.2, 0.3, 0.4, 1, 2, 3, 4, 10, 20, 30, 100, 200, 300, and 400 ohms.....	55.00
1	Rubber Hammer, rubber ball 2 cm dia.....	.30
1	Tuning Fork, electric, 128 vibrations.....	12.50
1	Wave Motion Apparatus, consist of rectangular box 30x50 cm with glass bottom, including set of forms for refraction, diffraction, etc.....	20.00
1	Prism mounted.....	4.50
1	Metal Support with lamp socket.....	3.25
1	Jolly Balance, simple form, complete without weights.....	11.00

### CHEMISTRY

Minimum Requirement: One set for each group of 12 pupils

Quantity	Description	Approx. Price
3	Files, Triangular, 4".....	\$ .45
3	Horseshoe Magnets, 10 cm long.....	.90
12	Candles, paraffin, sixes.....	.50
1	Balance, Harvard Trip, agate bearings, beam weighs 10 g. to 0.1 g, sensibility 5 cg.....	12.00
1 set	Weights, Metric, in wood block, 1 cg to 50 g, including 1 cg, (2) 2 cg, 5 cg, 1 dg, (2) 2 dg, 5 dg, 1 g, (2) 2 g, 5 g, 10 g, (2) 20 g and 50 g.....	1.75
12	Beakers, with lip, capacity 50 cc.....	1.80
12	Charcoal Blocks, 4"x1"x3/4".....	.85
6	Blow Pipes, 8".....	1.20
12	Bottles, wide mouth 8 oz.....	1.80
4	Bottles, narrow mouth 32 oz.....	1.80
6	Bottles, gas, capacity 1/2 pt.....	1.50
3 sets	Reagent Bottles, 125 cc, narrow mouth, glass stoppered, with name blown in glass, 12 in set, one each of the following: No. 1 Hydrogen Sulphite, No. 2 Hydrochloric Acid, No. 3 Acetic Acid, No. 4 Sulphuric Acid, No. 5 Nitric Acid, No. 15 Ammonium Hydroxide, No. 16 Ammonium Sulphide, No. 20 Barium Chloride, No. 23 Calcium Hydroxide, No. 26 Silver Nitrate, No. 27 Lead Acetate, No. 61 Sodium Hydroxide.....	15.00
5	Burettes, Mohr's, capacity 50 cc graduated to 0.1 cc.....	5.00
6	Bunsen Burners, new form, with needle valve gas control..... (If no gas is available specify: 6 alcohol lamps, \$5.40.)	3.90
6	Wing Tops, brass.....	.90
6	Clamps, burette.....	3.30
6	Clamps, Mohr's brass, for burettes, 2 1/4".....	1.32
10	Corks, quality XX, No. 7, 13/16" dia.....	.09
40	Corks, quality XX, No. 10, 1" dia.....	.40
10	Corks, quality XX, No. 8, 3/4" dia.....	.10
6	Deflagrating Spoons, brass, 3/4" cup, 15" handle.....	.78
6	Dishes, evaporating, Coors porcelain, No. 00A, capacity 70 cc.....	.72
2 pkg.	Filter Paper, 100 sheets, 10 cm dia.....	.28
6	Flasks, flat bottom, 125 cc capacity.....	1.20
6	Funnels, glass, 50 mm dia.....	1.68
6	Funnel Tubes, thistle top, straight stem, 30 cm long.....	.90
6 pc.	Gauze, iron wire, 20 mesh, 6"x6".....	.72
1 lb.	Glass Rod, 3/16" dia.....	.85
2 lb.	Glass Tubing, outside dia. 3/16".....	1.40
2	Graduates, cylindrical, graduated up and down, 500 cc by 5 cc.....	3.20
6	Mortars, porcelain, with pestle, No. 1, capacity 90 cc.....	2.82
12	Pipettes, with rubber bulbs (medicine droppers).....	.30
1 ft.	Platinum Wire, No. 28.....	3.30
6	Rubber Stoppers, 2-hole, to fit 125 cc flask.....	.35
18 ft.	Rubber Tubing, white, 3/16" dia., 3/64" wall.....	2.16



6	Sand Baths, iron, 4" dia.	.84
6	Supports, ring stand with 3 rings.	9.00
36	Test Tubes, 6"x $\frac{3}{4}$ "	1.05
24	Test Tubes, 6"x $\frac{3}{4}$ "	.70
6	Test Tubes, Pyrex, 100x13 mm.	.36
6	Tongs, crucible, 9" long	1.80
6	Troughs, pneumatic, galvanized iron 5"x9"x12"	7.50
12	Watch Glasses, 2"	.60
12	Watch Glasses, 2 $\frac{1}{2}$ "	.90
4 oz.	Aluminum Wire, No. 24, spool.	.90
1 spool	Copper Wire, 4 oz. spool, No. 18.	.25
1 roll	Plano Wire, No. 18, 4 oz. roll.	.75
1 pkg.	Picture Wire, No. 1 25-yd. pkg.	.15
Total		\$100.02

## CHEMICALS

## Minimum Requirement: One set

Quantity	Description	Approx. Price
1 lb.	Acid Acetic C.P. 99.5% (Glacial)	.65
4 oz.	Acid Arsenous Technical Powder	.20
1 oz.	Acid Benzoic From Toloul U.S.P.	.30
1 oz.	Acid Citric U.S.P. Crystals	.30
6 lb.	Acid Hydrochloric C.P. Concentrated	1.55
7 lb.	Acid Nitric C.P. Concentrated	2.40
4 oz.	Acid Oxalic Technical Crystals	.22
4 oz.	Acid Phosphoric C.P. 85%	.50
9 lb.	Acid Sulphuric C.P. Concentrated	2.00
4 oz.	Acid Tartaric U.S.P. Crystals	.30
1 pt.	Alcohol Methyl 95%	.45
4 oz.	Aluminum Metal Pellets	.30
1 lb.	Aluminum Potassium Sulphate Technical Crystals	.25
1 lb.	Aluminum Sulphate Technical Crystals	.25
1 lb.	Ammonium Carbonate U.S.P. Lumps	.50
1 lb.	Ammonium Chloride Pure White Granular	.30
4 lb.	Ammonium Hydroxide C.P. Concentrated	1.70
4 oz.	Ammonium Nitrate Pure Granular	.30
1 lb.	Ammonium Sulphate Technical	.25
4 oz.	Ammonium Sulphide C.P. Solution Light	.45
4 oz.	Antimony Metal Powder	.30
1 oz.	Antimony Trioxide C.P.	.40
4 oz.	Antimonyl Potassium Tartrate U.S.P.	.45
1 lb.	Barium Chloride Technical Crystals	.25
4 oz.	Barium Dioxide C.P.	.45
1 pt.	Benzene Technical 90%	.35
1 oz.	Bismuth Metal Lump 98%	.35
1 oz.	Bismuth Nitrate C.P.	.55
1 oz.	Bromine C.P.	.55
1 oz.	Cadmium Sulphate C.P. Crystals	.40
1 lb.	Calcium Carbide Technical	.25
1 lb.	Calcium Carbonate Marble Chips	.20
1 lb.	Calcium Chloride Technical Anhydrous 4 Mesh	.45
1 lb.	Calcium Oxide Technical Lumps	.30
4 oz.	Calcium Sulphate C.P.	.35
1 lb.	Calcium Sulphate Calcined (Plaster of Paris)	.20
1 lb.	Calcium Sulphate Native Gypsum Lumps	.20
1 lb.	Charcoal Animal Powder	.35
1 lb.	Charcoal Wood Lumps	.30
1 lb.	Charcoal Wood Powder	.30
4 oz.	Chromium Potassium Sulphate Pure Lumps	.20
1 oz.	Cobalt Metal Granular	.80
1 oz.	Cobalt Nitrate C.P. Crystals	.35
4 oz.	Copper Metal Sheet 30 B&S gauge	.25
4 oz.	Copper Metal Shot (Punchings)	.20
4 oz.	Copper Metal Turnings	.25
1 oz.	Copper (ic) Nitrate C.P.	.30
1 lb.	Copper (ic) Sulphate Technical Crystals	.25
1 lb.	Dextrose Pure Granular	.30
4 oz.	Ether Sulphuric U.S.P.X.	.25
4 oz.	Gelatine Ground	.40
1 oz.	Indigo Lump	.30
1 oz.	Iodine U.S.P. Resublimed	.75
1 lb.	Iron Metal Filings Fine	.25
4 oz.	Iron Metal Pure Powder 80 Mesh	.20
1 lb.	Iron (ous) Ammonium Sulphate C.P.	.60
4 oz.	Iron (ic) Chloride U.S.P.	.25
1 lb.	Iron (ous) Sulphate Technical Crystals	.20
1 lb.	Lead Metal Foil	.60
1 lb.	Lead Metal Shot	.30
4 oz.	Lead Nitrate Technical	.20
1 lb.	Lead (Mono) Oxide Yellow (Litharge)	.35

1 oz.	Litmus Cubes Blue .....	.25
1 lb.	Magnesite Powder .....	.35
1 oz.	Magnesium Metal Ribbon .....	.45
1 lb.	Magnesium Chloride Technical Crystals .....	.30
1 lb.	Magnesium Sulphate U.S.P. Crystals .....	.20
4 oz.	Manganese Dioxide C.P. Powder .....	.40
1 lb.	Manganese Dioxide Native Granular .....	.25
1 lb.	Manganese Dioxide Native Powder .....	.25
1 oz.	Manganese Sulphate C.P. .....	.30
1 lb.	Mercury Metal Refiltered .....	2.75
1 oz.	Mercury (ic) Chloride C.P. .....	.45
1 oz.	Mercury (ic) Oxide U.S.P. Red .....	.50
1 oz.	Nickel Metal Shot .....	.20
1 oz.	Nickel Nitrate C.P. .....	.30
1 lb.	Paraffin Solid .....	.18
1 oz.	Phosphorus Red Amorphous .....	.35
1 oz.	Phosphorus Yellow Sticks .....	.40
4 oz.	Potassium Bichromate Technical Crystals .....	.20
4 oz.	Potassium Bitartrate U.S.P. Powder .....	.25
1 oz.	Potassium Bromide U.S.P. Granular .....	.20
4 oz.	Potassium Chlorate C.P. Crystals .....	.35
1 lb.	Potassium Chlorate U.S.P. Crystals .....	.30
4 oz.	Potassium Chloride C.P. .....	.40
1 oz.	Potassium Chromate Pure .....	.50
4 oz.	Potassium Cyanide Pure Granular .....	.30
4 oz.	Potassium Ferricyanide Pure Crystals .....	.25
1 lb.	Potassium Nitrate Pure .....	.25
4 oz.	Potassium Permanganate U.S.P. .....	.40
1 lb.	Potassium Sulphate Pure .....	.25
1 oz.	Potassium Sulphocyanate C.P. .....	.65
1 lb.	Rosin Lumps .....	.90
10 g	Silver Metal Foil .....	.30
1 oz.	Silver Nitrate C.P. .....	.50
4 oz.	Soap Castile Bars Pure .....	.35
1 oz.	Sodium Metal .....	.50
1 lb.	Sodium Acetate Technical Crystals .....	.35
1 oz.	Sodium Amalgam 5% .....	.50
1 lb.	Sodium Bicarbonate Powder .....	.25
1 lb.	Sodium Calcium Hydroxide 8 Mesh .....	.65
1 lb.	Sodium Carbonate C.P. Anhydrous .....	.35
1 lb.	Sodium Carbonate Technical Crystals .....	.40
5 lb.	Sodium Chloride Fine White .....	.65
1 lb.	Sodium Hydroxide C.P. Sticks .....	.25
1 lb.	Sodium Hydroxide Technical Granular .....	.20
1 lb.	Sodium Hyposulphite Pea Size Crystals .....	.30
4 oz.	Sodium Nitrate C.P. Granular .....	.25
1 lb.	Sodium Nitrate Pure Crystals .....	.30
1 lb.	Sodium Phosphate Dibasic Technical Crystals .....	.30
1 lb.	Sodium Sulphate Technical Crystals .....	.30
1 lb.	Starch Corn .....	.35
1 oz.	Strontium Chloride C.P. .....	.35
1 oz.	Strontium Nitrate C.P. Anhydrous .....	.20
1 lb.	Sulphur Roll .....	.45
½ quire	Test Paper Litmus Blue .....	.45
½ quire	Test Paper Litmus Red .....	.45
4 oz.	Tin Metal Pure Mossy .....	.50
4 oz.	Tin Metal Pure Sticks .....	.70
1 oz.	Urea Pure .....	.25
1 lb.	Zinc Metal Technical Mossy .....	.40
1 lb.	Zinc Metal Technical Powder .....	.45
1 lb.	Zinc Sulphate Pure Crystals .....	.30
Total .....		\$51.95

#### D. GENERAL EQUIPMENT—

DEALERS IN SCHOOL EQUIPMENT AND SUPPLIES:\*

*Science Laboratory Apparatus:* W. M. Welch Mfg. Co., care of Mr. Frank Curtiss, Raleigh, N. C.; Central Scientific Co., Chicago, Ill.; L. E. Knott Apparatus Co., Cambridge, Mass.

*General School Supplies:* Southern School Supply Co., Raleigh, N. C.; Carolina School Supply Co., Charlotte, N. C.; Milton Bradley Co., Atlanta, Ga.; Clanton and Webb Co., 147 Whitehall St., Atlanta, Ga.; A. Flanagan Co., Chicago, Ill.; E. W. A. Rowles Co., 2345-2351 La Salle St., Chicago, Ill.

\*These lists are given here for your convenience; they are by no means exhaustive, nor are they advertisements. Other reputable dealers may be added to subsequent lists if they circularize the Department.



*Desks, Tables, Chairs:* Southern Desk Co., Charlotte, N. C.; Carolina School Supply Co., Charlotte, N. C.; Standard Chair Co., Thomasville, N. C.; Kewaunee Mfg. Co., Kewaunee, Wis.; Leonard Peterson, Chicago, Ill.; Art Metal Construction Co., (Principal's filing cabinets), represented by Storr Engraving Co., Raleigh, N. C.; Southern School Supply Co., Raleigh, N. C.

*Maps:* Denoyer-Geppert Co., Scientific Map Makers, Chicago, Ill.; Rand McNally & Co., 536 S. Clark St., Chicago, Ill.; McConnell School Map Co., 213 Institute Place, Chicago, Ill.; A. J. Nystrom and Co., 2249 Columbus Ave., Chicago, Ill.

*Stage Curtains and Settings:* Bianchi, Asheville, N. C.; Korner-Wilson Co., Raleigh, N. C.

*First Aid:* Winchester Surgical Supply Co., Charlotte, N. C.; Southern School Supply Co., Raleigh, N. C.

*Pictures:* Perry Picture Co., Malden, Mass.; G. E. Brown & Co., 38 Lovett St., Beverly, Mass.; Brown-Robertson Co., Inc., 415 Madison Ave., Gallery, New York; Curtis & Cameron, Coply Prints, 14 Harcourt St., Boston, Mass.; Elson Picture Co., Belmont, Mass.; Bureau of Art Federation, Washington, D. C.; Lehman Pictures for History and Geography, Denoyer-Geppert Co., Chicago, Ill.

*Music:* Theodore Presser, Chestnut St., Philadelphia, Pa.; Oliver Ditson Publishing Co., New York City; Coble Co., 1216 Coble Bldg., Chicago, Ill.; G. Schirmer, 3 E. 43rd St., New York City; C. C. Birchard, Boston, Mass.; Thos. W. Phillips, Box 757, Bessemer, Mich.; Clayton F. Summy Co., 429 Wabash Ave., Chicago, Ill.

*Pennants, Novelties, Favors for School Parties:* The Decorative Poster Co., Norwood Station, Cincinnati, Ohio; The Standard Pennant Co., Big Run, Pa.; Van Housen's Favor Co., 81 West Lake St., Chicago, Ill.

*Standard Tests:* Bureau of Educational Research, Uni. of N. C., Chapel Hill, N. C.; Public School Publishing Co., Bloomington, Ill.; World Book Co., Yonkers, N. Y.

*Books and Library Supplies, Magazines at club rates:* Library Bureau, Main and Ninth Sts., Richmond, Va.; Gaylord Bros., Syracuse, N. Y. (Library Supplies); Baker-Taylor Co., New York City; John Wannamaker, New York City.

*Pins, Rings, etc.:* L. G. Balfour Co., Attleboro, Mass.; Eagle Regalia Co., 115 Nassau St., New York City.

*Aquariums and Supplies:* Arthur Catchpole, 625 Amsterdam Ave., New York City; Belto Aquarium, 2141 Crescent Ave., St. Louis, Mo.; Mr. W. S. O'Brien, Independence Nurseries Co., Independence, Ohio.

*Plays:* Stewart-Kidd, Cincinnati, Ohio; Old Tower Press, Ltd., 59 E. Adams St., Chicago, Ill.; Eldridge Entertainment House, Franklin, Ill.; Edgar S. Werner & Co., 11 E. 14th St., New York City; Sheridan Teachers Supply Co., Greenwood, S. C.; T. S. Dennison Co., 624 S. Wabash Ave., Chicago, Ill., Dept. 58; Dramatic Publishing Co., 452 Dearborn St., Chicago, Ill.; N. C. Dramatic Association, Extension Bureau, U. N. C., Chapel Hill, N. C.; Samuel French, New York City; Clayton F. Summy, Plays and Pageants, 64 E. Van Buren St., Chicago, Ill.; Paine Publishing

Co., 15 E. Fourth St., Dayton, Ohio; Walter H. Baker Co., 41 Winter St., Boston, Mass.; David C. Cook, Elgin, Ill.; Play Production for Amateurs (50c), Extension Bureau, U. N. C., Chapel Hill, N. C.

*Coordinate Paper for Mathematics Teachers:* Keuffel and Esser Co., 127 Fulton St., New York City.

For complete equipment for all high school rooms consult Strayer-Engelhardt Inventory Book for High Schools, C. F. Williams and Son, Inc., Albany, N. Y.

#### NORTH CAROLINA NURSERIES:

<i>Name</i>	<i>Address</i>	<i>Acres</i>	<i>Specialties</i>
Altifirma Nursery .....	Highlands .....	3	Ornamental
Audubon Nursery .....	Wilmington R-2 .....	25	Ornamental
Barnes, George H. ....	Roxobel .....		Ornamental
Beadle Nursery, C. D. ....	Biltmore .....	15	Ornamental
Boston Nursery .....	Cana .....		Apple
Booie, W. D. ....	Mocksville R-2 .....		Apple and Peach
Bolick Nursery, Mrs. A. F. ....	Conover .....		Privet
Bolick Plant Farm .....	Conover .....		Privet
Britton, Robert S. ....	Asheville .....	2 1/2	Ornamental
Bost, J. M. ....	Newton .....		Peach
Burgess, Thos. S. ....	Sou. Pines .....		Ornamental
Carolina Nursery .....	E. Flat Rock .....	2	Apple and Grape
Candor Development Co. ....	Candor .....		Peach and Apple
Carolina Nurseries .....	Burlington .....		Apple
Catawba County Nursery .....	Newton R-3 .....	13	General
Chatham Nursery .....	Siler City R-4 .....	2 1/4	General
Cherokee Indian Reservation .....	Cherokee .....	4 3/4	General
Coastal Plain Station .....	Willard .....		Grapes and Bulbs
Coble, L. G. ....	Kimesville .....		Peach
Coffey, W. L. ....	Sands .....		Apple
Continental Plant Co. ....	Kittrell .....	73	General
Crayton, F. M. ....	Biltmore .....	15	Ornamental
Croom, J. F. & Bro. ....	Magnolia .....	200	Bulbs
Crowells Plant Farm .....	Concord .....	2	Ornamental
Cumberland Nurseries .....	Marston .....	30	General
Davie Nursery .....	Mocksville .....	10 1/2	General
Deaton Nurseries .....	Vass R-1 .....	10	Ornamental
Ellis, A. J. ....	Clayton .....		Grape
Ezell, V. L. ....	Whittier .....		Apple
Frost, Robt. T. ....	Charlotte .....		Ornamental
Fullbright, M. S. ....	Newton R-1 .....		Peach
Gardens of the Blue Ridge .....	Pineola .....	20	Ornamental
Garden Spot Nursery .....	La Grange .....	2	General
Globe Plant Co. ....	Liberty .....	4	Strawberry
Greensboro Nurseries .....	Greensboro R-2 .....	21	General
Griffin, John .....	High Point .....		Ornamental
Hamburg Nurseries .....	Weaverville .....	1 3/4	Apple and Peach
Hardy Evergreen Gardens .....	Old Fort, R-1 .....	5	Ornamental
Hayes, Edward G. ....	Charlotte .....		Ornamental
Hendersonville Nurseries .....	Hendersonville .....		Ornamental
Highland Farm & Nursery .....	Concord R-4 .....	2	General
Hill's Nursery .....	Highlands .....		Ornamental
Holly Tree Nursery .....	Sou. Pines .....	3	Ornamental
Howard-Hickory Nursery Co. ....	Hickory .....	65	General
Houck, Jno. M. ....	Marion .....		General
Intermountain Nursery .....	Old Fort .....		Apple and Peach
Killian Nursery, The .....	Newton .....	13	General
Lenoir Nursery .....	La Grange .....		General
Laurel Park Nursery .....	Hendersonville .....	4	Ornamental



<i>Name</i>	<i>Address</i>	<i>Acres</i>	<i>Specialties</i>
Lindley, J. Van, Nur., Co.	Pomona	257	General
Maple Grove Nursery Co.	Kimesville	4	General
Mecklenburg Nurseries	Charlotte R-1	7	Ornamental
Middlemount Gardens	Asheville		Ornamental
Miller Plant Co.	Hickory R-3	5	Strawberry
Montgomery Nursery	Candor	18	General
Morris, C. B.	Colerain		Apple
Mullis, John E.	Marshville R-2		Apple
Newson, L. E.	Lucama		Apple and Peach
Newton Nursery Co.	Newton R-1	6	General
North State Nurseries	Julian	7	General
Oaksley Nurseries	Asheville	8	Ornamental
Overman, R. B.	Selma R-2	1¼	Apple and Pear
Piedmont Nursery	Kimesville R-1	14	General
Pinehurst Nurseries	Pinehurst	3	Ornamental
Ponshurt Greenhouses	Asheville R-5		Ornamental
Reynolds Nursery Co.	Winston R-2	7¼	General
Reynolds, L. A.	Winston R-1	5	Ornamental
Roberts, J. K.	Biltmore	2	Ornamental
Shepard, William	N. Wilkesboro	1½	Apple and Pear
Sinclair Nursery Co.	Hendersonville R-3	4	Apple
Spoon Brothers Nursery	Burlington	3	General
Spring Hope Nursery Co.	Spring Hope R-3		Apple
Tinga Nursery & Truck Farm	Castle Hayne	2	Ornamental
Throneburg, F. M.	Newton, R-1	2	Grapes and Strawberry
Valdesian Nursery	Bostic		General
Valley Nook Nursery	Cary		General
W. Asheville Nursery Co.	Asheville, R-3	3	Ornamental
Western, N. C. Nursery Co.	Stecoah	10	General
Yadkin Nursery	Star	5½	General
Young, Robert C.	Greensboro	10	Ornamental

For detailed suggestions relative to beautification of school grounds consult:

Educational Publication No. 95, "Arbor and Bird Day Program," State Department of Public Instruction, Raleigh, N. C.

Mr. John J. Blair, Director Division Schoolhouse Planning, State Department of Public Instruction, Raleigh, N. C.

### E. HIGH SCHOOL RECORDS AND REPORTS—

*Records.* A right reliable index of an efficient high school is a record system which is adequate, accurate, complete, and legible. In order to stimulate such a condition the State Department of Public Instruction has printed and distributes through the county superintendents a sufficient number of high school registers and high school pupil's permanent record cards for all the high schools of the State. The importance of securing these records and keeping them properly is quite obvious when one considers the vast expenditure for schools and the need for proper classification and direction of the pupils.

*Reports.* There are two reports which should be made each year to the State High School Supervisor—the Preliminary report, which should be submitted when request is made promptly after the opening of school, and the Annual report, to be made immediately after the close of school. The Annual report should be made out in triplicate, two copies being submitted to the superintendent, one of which to be approved and forwarded to the State High School Supervisor, and one copy kept in the office of the principal

for reference. No school can be rated properly until the Annual report is submitted.

*Filing Cabinet.* There should be provided in each high school a filing cabinet for the safe-keeping of records. It is an indispensable part of the equipment of every principal's office. A cabinet especially suited to the needs of all systems, except the larger ones, contains the following units:

Two 5x8 units—one each for high school and elementary school permanent record cards.

One 10x4½ unit—for folder papers, documents, envelopes, and duplicate Monthly, Annual, and Preliminary reports.

Two 4x6 units—one for census cards (active and reserve), the other for high school pupil registration and daily schedule cards.

One or two 9x12 units—for correspondence and folders for various school subjects and activities such as the following: Achievement Tests, Agriculture, Arithmetic, Assembly, Athletics, Attendance, Basketball, Bills, Bulletin Board, Building Standards, Certificates of Teachers, Chemistry, College Entrance Requirements, Commencement, Committees of Faculty, Contracts of Teachers, County Superintendent, Daily Schedules, Debate, Declamations, Dramatics, Elementary School, English, Equipment, Extra-Curricular Activities, Failures, French, Grounds, Health, History, Intelligence Tests, Inventory, Janitor, Latin, Library, Magazines, Maps, Mathematics, Music, Parent-Teacher Associations, Pictures, Playground Apparatus, Publicity, Publishers, Receipts, Record Forms, Registration of Pupils, Science, Special Days' Observance, State Department, Supervision, Teachers' Credentials, Trucks.

F. VISUAL EDUCATION.—Not only do visual aids in instruction condition the degree of learning that takes place but the amount retained as well. Everywhere school people are giving increased attention to this matter. It is well that they should, because all of the sciences, both social and natural, when presented thus graphically will stimulate in the pupil greater interest and effort.

The Visual Education Division of the State Department of Public Instruction is prepared to render assistance in four ways, namely:

1. By providing films of a general educational nature for community gatherings.
2. By providing for classroom work in History and Science, stereoscopic pictures, lantern slides, and film slides.
3. By securing from manufacturers discounts of 10 to 30 per cent on approved moving picture machines and other projection equipment.
4. By installing the machines without charge, training the operator and rendering other assistance when it is needed, either through correspondence or in person.

All of the films, slides, and pictures are supplied free of charge, except for cost of transportation both ways. At present 2,000 reels of a general educational nature are available. For classroom purposes there may be had over 1,000 lantern slides, stereoscopic pictures, and film slides covering such subjects as Transportation, National Parks, Industries, and General Science. Although the Division of Visual Education is amply able to supply all schools with reels of a general nature, its supply of slides for classroom purposes is rather limited. Individual schools can buy an adequate supply, however, for around \$200. Map slides in either the Political, Physical or Blackboard-Outline series may be had for around \$1.95 each.



The cost of equipment for visual education in the average school would be, approximately, \$265 for moving picture machine, \$90 for stereopticon machine (to be used in classroom work), and such an additional amount for slides as is necessary:

For particulars consult:

Mr. J. B. Williamson, Director Visual Education, State Department of Public Instruction, Raleigh, N. C.

Dorris, Visual Instruction in the Public Schools, 1928, Ginn and Co., New York City. Cost, \$2.00.

### 8. Building

In order for a school to meet the requirements for accredited rating there must be an adequate, sanitary building. The minimum standard as to rooms is as follows:

A number of regulation-size classrooms sufficient to accommodate all classes without congestion, separate rooms sufficiently large for library, laboratory, principal's office, and an auditorium. In addition, there should be, if possible, separate rooms for vocational work and teachers' rest room.

All buildings should be heated with steam and have running water. Above all else, rooms should be kept clean and in a sanitary condition. This is especially necessary with respect to toilets.

For detailed standards for buildings and service systems, consult the bibliography on page 44.

## THE CLASSIFICATION OF HIGH SCHOOLS

There are two groups of standard high schools in North Carolina:

Group I—Class AA, Class A, and Class B.

Group II—Class A, and Class B.

(Class B is the lowest standard or accredited school.)

Note. Every teacher employed in a standard high school must hold a high school teacher's certificate.

The standards of these groups are set forth as follows:

### Standard High Schools

#### Group I—Class AA.

1. A four-year course of study beyond the seventh grade.
2. Length of term—nine months, or 180 days, exclusive of holidays.
3. Number of teachers—twelve teachers holding proper certificates.
4. Length of recitation periods—at least forty minutes.
5. Sixteen standard units required for graduation.
6. Laboratory facilities for the teaching of Science.
7. Library of at least 1,000 volumes of distinctively high school grade.
8. Required number of maps, charts, and other equipment.
9. Attendance—at least 315 pupils in average daily attendance.

#### Group I—Class A.

1. Four-year course of study.
2. Length of term—nine months, or 180 days, exclusive of holidays.
3. Number of teachers—six whole time teachers.
4. Length of recitation periods—at least forty minutes.
5. Sixteen units required for graduation.
6. Laboratory facilities for the teaching of Science.
7. Library of not fewer than 500 volumes.
8. Maps according to requirements.
9. Attendance—at least 135 pupils in average daily attendance.

*Group I—Class B.*

1. Four-year course of study.
2. Length of term—nine months, or 180 days, exclusive of holidays.
3. Number of teachers—four whole-time teachers, one of whom may be a teacher of vocational subjects.
4. Length of recitation periods—at least forty\*minutes.
5. Sixteen units required for graduation.
6. Laboratory facilities for the teaching of Science.
7. Library of not fewer than 500 volumes.
8. Maps according to requirements.
9. Attendance—at least 75 pupils in average daily attendance.

*Group II—Class A.*

1. Four-year course of study.
2. Length of term—eight months, or 160 days, exclusive of holidays.
3. Four whole-time teachers, one of whom may be a teacher of vocational subjects.
4. Length of recitation periods—at least forty-five minutes.
5. Sixteen units required for graduation.
6. Laboratory facilities for the teaching of Science.
7. Library of not fewer than 300 volumes.
8. Maps according to requirements.
9. Attendance—at least 75 pupils in average daily attendance.

*Group II—Class B.*

1. Four-year course of study.
2. Length of term—eight months or 160 days, exclusive of holidays.
3. Three whole-time teachers, holding proper certificates.
4. Length of recitation periods—at least forty-five minutes.
5. Sixteen units required for graduation.
6. Laboratory facilities for the teaching of Science.
7. Library of not fewer than 300 volumes.
8. At least forty-five pupils in average daily attendance.
9. Maps according to requirements.

**Non-Standard High Schools**

The schools below those of standard grade should be classified. The work in a school should be so organized that it can be definitely estimated just what amount of credit a pupil is entitled to for the work he has completed. There are three classes of schools below those of standard grade. These constitute what will be known as Group III Schools, Classes A, B, and C.

*Group III—Class A.*

This is a three-teacher, non-standard high school.

A high school may have three whole-time teachers, offer four years of work, and have a term of thirty-two weeks, but not be rated as a standard school because certain requirements have not been met. Such a school is called a three-teacher non-standard school. In such a school every effort should be put forth, of course, to meet the requirements of a standard or accredited school.

*Group III—Class B.*

1. Three years of work beyond the elementary school; that is, the work of the eighth, ninth, and tenth grades, or first, second, and third years of high school.
2. A term of thirty-two weeks, exclusive of holidays.
3. Recitation periods of forty-five minutes in length.
4. Two whole-time teachers, holding proper certificates.



5. Laboratory facilities for the teaching of General Science, Biology, and Geography.
6. A library of not less than 200 volumes.
7. Twelve units of work completed.
8. An average daily attendance of thirty-five pupils.

*Group III—Class C.*

1. Two years of work beyond the elementary school; that is, the work of the eighth and ninth grades, or first and second years of high school.
2. A term of thirty-two weeks, exclusive of holidays.
3. Recitation periods of forty-five minutes in length.
4. One whole-time teacher holding proper certificate.
5. Eight units of work completed.
6. Library of 100 volumes.
7. Twenty pupils in average daily attendance.

## COLLEGE ENTRANCE REQUIREMENTS

The colleges in the State differ somewhat with regard to credits or units required for entrance to college. The colleges have agreed, however, to grant the following credits for work done in high school toward meeting college entrance requirements:

	Units		Units
English .....	4	General Science .....	.5 or 1
Social Science, including		Physiography .....	.5 or 1
History and Civics .....	4	Drawing .....	1
Mathematics .....	4	Commercial Geography .....	.5
Greek .....	3	Vocational Agriculture .....	2
Latin .....	4.7	Bookkeeping .....	1
French .....	3	Commercial Arithmetic .....	1
German .....	3	Stenography .....	1
Spanish .....	2	Manual Training .....	2
Botany .....	.5 or 1	Home Economics .....	2
Chemistry .....	.5 or 1	Bible .....	2
Physics .....	.5 or 1	Music .....	2
Physiology .....	.5	Expression .....	.5
Zoology .....	.5 or 1		

It should be kept in mind in estimating college credits that a unit of work is 120 clock hours. A subject may be given an entrance credit of one unit if the course is pursued for a term of thirty-two weeks, five days to the week, with recitation periods of forty-five minutes in length. The same credit may be secured for a thirty-six weeks' term with forty-minute recitation periods. If a student knows what college he expects to enter, he should plan his course to meet the entrance requirements of that institution.

## COLLEGE ENTRANCE EXAMINATIONS

In North Carolina there are two bases for admission to college—graduation from an accredited high school or a passing grade on the college entrance examination. This examination may be taken by graduates of non-standard high schools, either at the county superintendent's office the first week in June, or at the college concerned on registration day. The subjects covered in the examination are: English, Mathematics, (Algebra and Geometry), History (General and American), Science, and either Latin or French.

## NORTH CAROLINA HIGH SCHOOL SENIOR EXAMINATION

Each spring around the middle of February the State High School Supervisor, coöperating with the North Carolina College Conference, gives to all seniors in the State the North Carolina High School Senior Examination. All seniors whatsoever take it—public and private, white and colored, urban and rural. Although the chief purpose in giving the examination relates to homogeneous grouping in college, its results can be used advantageously by the principal as an aid in supervision and guidance. The response of virtually all the principals in this enterprise has been intelligent and whole-hearted, and the results should be beneficial.

## SUMMER HIGH SCHOOLS

There is a growing tendency in the State to operate summer high schools, the sort of school which is run over and above the regular session of eight or nine months chiefly for the purpose of removing conditions. Where such a school is operated the work should be organized according to the following acceptable standards, so that the proper amount of credit may be given:

*Credit for new work.* A unit's credit for new work in summer school should be given on a basis of 120 clock hours of recitation work, the same as in regular session. If a student takes one subject for 6 weeks, 5 days per week, 4 hours per day (2 hours each of recitation and supervised study), one unit's credit may be given. Credit for a subject on which both semesters were failed should be given on the same basis as for new work.

*Credit for make-up work.* In case a pupil has failed only one semester of a subject, he should be allowed to remove the deficiency on a basis of 30 recitation hours' work per half unit of credit. A normal pupil should be able to secure credit for half-units in two subjects in a six-weeks' session. Specifically, if a pupil takes one subject for six weeks, 5 days per week, one hour per day, one-half of a unit's credit may be given. In one summer term pupils should be allowed to take only one new subject or two make-up subjects.

## REQUIREMENTS FOR MEMBERSHIP IN THE ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS OF THE SOUTHERN STATES

1. *Reports.* No school shall be considered for accrediting unless the regular annual blank furnished for the purpose shall have been filled out and placed on file with the State High School Inspector. New schools must submit evidence of application for membership (e.g. a resolution) by the local board of education or school trustees. These reports must be in the hands of the Inspector by October 15.

2. *Classification.* In order for a school to qualify for membership in the Association it must be in the Group I classification in North Carolina.

3. *Dues.* Payment of annual dues of \$10.

4. *Organization.* In order to be accredited a school must require for graduation the completion of a four-year high school course of study em-



bracing sixteen units as defined by this Association. A unit course of study in a secondary school is defined as a course constituting approximately a quarter of a full year's work, covering an academic year of not less than 175 days, during which the school is actually in session, exclusive of holidays. This shall include in the aggregate not less than the equivalent of 120 sixty-minute hours of classroom work, two hours of shop or laboratory work being equivalent to one hour of prepared classroom work. More than twenty periods per week of academic subjects or twenty-five periods including vocational subjects, exclusive of choral music and physical training, should not be permitted except in cases of pupils who have demonstrated superior ability through previous scholastic achievement, which group shall not exceed 15 per cent of the enrollment.

5. *Pupil-teacher ratio.* a. All schools whose records show an excessive number of pupils per teacher, as based on the number enrolled in each class, even though they may technically meet all other requirements will be rejected. The Association recognizes thirty as maximum.

b. The enrollment in no class should exceed 30 pupils, as the efficiency of instruction is thereby impaired.

6. *Teachers.* a. The minimum scholastic attainment required of the faculty of any accredited secondary school on the Southern list is that not less than 75 per cent of the total number of teachers, including the superintendent, principal, teachers of academic subjects, Agriculture, and Home Economics, shall hold the bachelor's degree from a college approved by the Association. Teachers should have had professional training or at least one year's experience in teaching. (Professional training includes courses in psychology, methods and principles of teaching, history of education, observation and directed teaching, tests and measurements, etc.) After September 1, 1927, beginning teachers and principals must have had 12 semester hours in professional training. Beginning teachers (1928 and thereafter) are required to have at least three years of college training above high school graduation. (A semester hour is based on not less than 15 hours of standard classroom recitation.)

b. The Commission on Accreditation will decline to consider any school whose teaching force consists of fewer than four teachers of academic subjects giving their full time to high school instruction. When local conditions warrant the introduction of courses such as Agriculture, Manual Arts, Home Economics, and Commercial subjects, the Commission will hold that a sufficient number of teachers and proper equipment must be added to provide adequately for such instruction. Sixteen daily recitations in high school subjects taught by not less than four teachers are considered a minimum in enforcing this standard.

c. The maximum teaching load of any teacher shall be 750 pupil-periods per week with not more than six daily recitations. The Commission will scrutinize with extreme care any school in which instructors teach as many as six daily periods. In interpreting this standard in connection with laboratory work in science and in connection with study room supervision a double period may be counted as the equivalent of one classroom exercise for teachers of academic subjects, provided that no combination of such work amounting to more than thirty-five periods a week is required of any

teacher. The minimum length of a recitation period shall be forty minutes in the clear.

7. *Program of studies.* Work shall be offered in English, Social Studies, Mathematics, Languages, Sciences, Fine Arts, Physical Education, and in the vocational subjects also, where local conditions render such introduction possible.

8. *Buildings and equipment.* a. The location and construction of the buildings, the lighting, heating and ventilation of the rooms, the nature of the lavatories, the corridors, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both pupils and teachers.

b. The laboratory and school library facilities shall be adequate for the needs of instruction in the courses taught. The school library should have 500 usable volumes exclusive of duplicates, text-books and government publications.

## THE MARKING SYSTEM

ITS PURPOSE.—The matter of improving the basis for assigning marks is one about which much has been said but little done. Marks should be given for three main purposes, namely: (1) to apprise parent and pupil of the degree of progress made, (2) to furnish a basis for promotion and honors, (3) to evaluate success of teachers.

DEFECTS.—If marks as they are usually given were valid and reliable—that is if they were to measure what they are supposed to measure and did it consistently and accurately, there would be no problem here. But that day has not arrived. The chief defects in the traditional practice are as follows:

(1) *Lack of agreement as to what to measure.* An investigation on this point reveals that out of 43 teachers questioned there were 49 different bases for assigning marks. Only two used achievement as the sole basis.

(2) *Too finely-graduated units of measure.* Who can say whether a history paper justifies a grade of 86 or 87, or even C plus or C minus? Johnson found that the marks assigned a Chicago high school pupil's Geometry paper by 114 mathematics teachers ranged all the way from 28 to 90.

(3) *Marks uniformly too high or too low.* Sometimes, for political reasons or on account of sympathy there is a tendency to give too many A's whether they represent actual accomplishment or not. The median scores on the North Carolina High School Senior examination for a particular high school as compared with those for the State as a whole will reveal to some extent whether this is practiced, as will degree of success in college or ability to cope with life situations.

### *Suggestions.*

(1) At a regularly organized teachers' meeting called for this purpose, the principal should clarify with his teachers what marks should represent; that they are an index of only accomplishment in terms of the declared purposes of each course. Such factors as effort, attitude toward teacher, conduct, etc., if marked at all, should appear separate and apart from the mark of achievement. In arriving at a pupil's mark, teachers should be encouraged to think in terms of the child's ability to use what he has



learned. For instance, in Physics, has the pupil merely learned a few principles and how to substitute in formulas? or, is he an independent creative worker, who knows not only the theory but how to put it in practice? This month an eleventh grade boy in one of our high schools dissected from an abandoned Ford sufficient apparatus with which to assemble an outboard motor for his boat which is now churning the waters of the Lumbee River.

(2) Set up a scheme of symbols by which a teacher can assign marks with reasonable accuracy. The percentage system of evaluating work should be discouraged as should, also, the use of plus and minus signs attached to symbols. It is suggested that each school follow one of the marking systems given below:

- A equals Excellent
- B equals Good
- C equals Fair
- D equals Poor
- E equals Failure
- X equals Incomplete because of necessary absence

The system above is better adapted to the smaller schools. The one below lends itself to the larger systems where the enrollment is sufficient to assign marks according to the Normal Probability curve:

- A equals Superior
- B equals Above Average.
- C equals Average
- D equals Below Average
- E equals Poor (Failure)
- X equals Incomplete because of necessary absence

(3) Insofar as it seems wise, distribute marks according to the Normal Curve of Distribution. Exceptionally good classes or poor ones will vary considerably sometimes, but rarely ever over 5 per cent from the Normal distribution.

In systems where 70 is the passing grade the following distribution is suggested:

- A (93-100), 7%
- B (85-92 ), 24%
- C (77-84 ), 38%
- D (70-76 ), 24%
- E ( 0-69 ), 7%

(4) At the end of each month and semester, teachers should make summaries of marks for each class showing the number and percentage assigned to each class; similar summaries should be made by departments, and a general summary for the school as a whole. Whether the marks are uniformly too high or too low can be determined by objective tests which have available norms. In this connection each principal should make use of the median scores by subjects which his seniors made on the North Carolina High School Senior Examination and other such tests. Success in college and in life are other indexes of excellence.

(5) After all, however many statistical analyses are made of teachers marks, it will be a worthless venture unless remedial measures are taken early in the year. At no time should a teacher assign a mark of failure unless she knows all the facts in the case such as the pupil's health, home conditions and home preparation and can report definite steps which she has taken to avert it.

## HIGH SCHOOL ACHIEVEMENT AND INTELLIGENCE TESTS

There appears below information concerning standard high school tests in achievement and intelligence. Although there are others which have merit, these are recommended specifically because of their comparatively high degree of reliability, extensive use, and available norms. Virtually all of them have two or three forms which, it is well to remember, are always of equal difficulty.

If administered properly, these tests have value as an instrument for:

1. Supervision.
2. Diagnosis of special difficulties.
3. Grading, promotions, and sectioning of classes.
4. Research.
5. Motivation of learning.

### Achievement Tests

#### ENGLISH:

*Spelling*—(grades 8 to 11). SIXTEEN SPELLING SCALES STANDARDIZED IN SENTENCES FOR SECONDARY SCHOOLS, by Briggs and Kelley, gives the second and third thousand most common words for the spelling vocabulary. (Supplements Ayres's Elementary school first thousand.) For examiner: one bulletin of title given above, 40 cents. (Scales not published separately.) Bureau of Publications, Teachers College, Columbia University, New York City.

*Vocabulary*—(grades 8 to 11.) THORNDIKE TEST OF WORD KNOWLEDGE. Forms 1, 2, 3, and 4. Each form \$1.50 per 100, including Manual of Directions. Bureau of Publications, Teachers College, Columbia University, New York City.

*Composition*—(grades 8 to 11). HUDLESON ENGLISH COMPOSITION SCALES. 25 cents net per copy. Directions are included. World Book Company, Yonkers, New York.

*Reading*—(grades 8 to 11). HAGGERTY READING EXAMINATION, SIGMA 3, Forms A and B. Each form with key and Class Record Sheet. \$1.00 per package of 25. Specimen set, 45 cents. World Book Company, Yonkers, N. Y.

#### MATHEMATICS:

*Arithmetic*—(grade 8). WOODY-MCCALL MIXED FUNDAMENTALS. Forms 1, 2, 3, and 4. Each form 60c per 100, including Direction Sheet. Sample set 20c. World Book Company, Yonkers, N. Y.

*Algebra*—(for pupils who have had one year). HOTZ FIRST-YEAR ALGEBRA SCALES. For pupil: One copy of each scale selected, each scale 70c per 100, except Graph Scale which is \$1.25 per 100. For examiner: one copy of Manual of Directions for First-Year Algebra Scales, 75c. Public School Publishing Co., Bloomington, Ill.

*Geometry*. SCHORLING-SANFORD PLANE GEOMETRY TEST. For pupil: Test Booklet, \$7.00 per 100. Specimen set, 10c. For examiner: One Manual of Directions and set of stencils, 50c. Bureau of Publications, Teachers College, Columbia University, New York City.



## HISTORY:

*American.* VAN WAGENEN AMERICAN HISTORY SCALES, INFORMATION SCALES—3 \$2.00 per 100, including Directions, Key, and Record Sheet. Bureau of Publications, Teachers College, Columbia University, New York City.

*Civics.* BROWN-WOODY CIVICS TEST. Form A, \$1.30 per package of 25, with Manual of Directions, Key, and Class Record; Specimen Set, 15c. World Book Company, Yonkers, N. Y.

## SCIENCE:

*General Science*—(grade 8). RUCH-POPENOE GENERAL SCIENCE TEST. Forms A and B, each \$1.39 per package of 25, including Manual of Directions, Key, Percentile Graph, and Class Record. Specimen set, 20c. World Book Company, Yonkers, N. Y.

*Biology*—(grade 9). RUCH-COSSMANN BIOLOGY TEST. Forms A and B, each \$1.30 per package of 25, including Manual of Directions, Key, and Class Record. Specimen set, 20c. World Book Co., Yonkers, N. Y.

*Physics*—(grade 11). IOWA PHYSICS TEST: Series A (Mechanics), B (Heat), and C (Electricity and Magnetism). Forms 1 and 2 for each series. Each form 50c per package of 25, including Manual of Directions and Class Record. Specimen set, 15c. Public School Publishing Co., Bloomington, Ill.

*Chemistry*—(grade 10). POWERS GENERAL CHEMISTRY TEST. Forms A and B, each \$1.10 per package of 25, including Manual of Directions, Key, and Class Record. Specimen set, 20c. World Book Co., Yonkers, N. Y.

## FOREIGN LANGUAGE:

*French*—(for students in first- or second-year French): AMERICAN COUNCIL BETA FRENCH TEST. Forms A and B, each \$1.30 per package of 25, including Manual of Directions, Key, Class Record. Specimen set, 25c. World Book Company, Yonkers, N. Y.

*Latin.* ORLEANS-SOLOMON LATIN PROGNOSIS TEST. \$1.30 per package of 25, including Manual of Directions, Key, and Class Record. Specimen set, 15c. World Book Company, Yonkers, N. Y.

WHITE LATIN TEST. (Achievement. Applicable in grades 8-11). Forms A and B, each \$1.20 per package of 25, including Manual of Directions, Key, and Class Record. Specimen set, 20c. World Book Co., Yonkers, N. Y.

COMPOSITE EXAMINATION: (grade 8). STANFORD ACHIEVEMENT TEST—ADVANCED EXAMINATION, by Kelley, Ruch, and Terman. Comprises a battery of achievement tests designed to measure very thoroughly the knowledge and ability of pupils in arithmetic, reading, spelling, science information, history, literature and language usage covered in grades 4-8. Forms A and B. \$1.90 per package of 25, including Key and Class Record. Manual of Directions printed separately (64 pages), 30c. Specimen set, 60c. World Book Company, Yonkers, N. Y.

## Intelligence Tests

TERMAN GROUP TEST OF MENTAL ABILITY. (Grades 8-11.) Forms A and B, each \$1.20 per package of 25, including Manual of Directions, Key, and Class Record. Specimen set, 15c. World Book Co., Yonkers, N. Y.

OTIS SELF-ADMINISTERED TESTS OF MENTAL ABILITY, INTERMEDIATE EXAMINATION. (Grades 8 and 9.) Forms A and B, each 80c per package of 25, including Manual of Directions, Key, Interpretation Chart, Percentile Graph, and Class Record. Specimen set, 30c. World Book Company, Yonkers, N. Y.

## EXTRA-CURRICULAR ACTIVITIES

**DEFINITION.** The term "Extra-Curricular Activities" is used here to represent those informal activities of pupils not cared for by the regular high school subjects but which, none the less, contribute definitely toward the seven recognized objectives of secondary education. For instance, athletics can be made to transfer to health, assemblies to ethical character, and dramatics or clubs to worthy use of leisure. The word "Extra-Curricular" coupled with more or less haphazard organization and hollow content, in some instances, has provoked adverse criticism. But if organized and administered properly this phase of school work will conduce toward a good school spirit and afford an excellent opportunity for training in citizenship.

**ORGANIZATION.** Suggestions regarding the organization and administration of an extra-curricular activities program follow:

1. Extra-curricular activities should be provided for in the regular daily schedule. In a seven 45-minute period day some have found it well to devote one period throughout the week to this purpose. A typical program is this: Monday—home room exercises; Tuesday and Friday—assembly; Wednesday—all clubs (i.e., *Dramatics*, Young Tar Heel Farmers); Thursday—physical education.

2. Each activity should be sponsored and directed by a teacher.

3. The type of organization should be adapted to the school. It is a mistake for small schools to undertake too extensive a program.

4. Pupil participation in extra-curricular activities should be directed so as to prevent neglect of other equally important activities or pursuit of studies.

5. Teachers should be employed with the understanding that they are to direct some extra-curricular activity in addition to their regular classroom work.

6. Night meetings, often the case in dramatics, should be avoided.

7. Unit credit for extra-curricular activities, if given at all, should be in excess of the sixteen basic units required for graduation.

8. Instead of crowding cantatas, plays, exhibits, recitals and other activities into a solid week of Commencement, it is much better to scatter them along in spring, avoiding the final rush and despair.

9. For detailed suggestions relative to the organization and administration of a program of extra-curricular activities, see one of the books on this subject listed in the professional bibliography on page 43.

### ACTIVITIES.

*Home Room.* It is well to devote at least one period a week to home room programs. The home room should be the basis for guidance and pupil representation. It should have a class organization. Typical topics for programs during the first semester follow: How to Study, Course of Study, How Can We Improve Our School, Protection of Property, Duties to Comrades, Duties to Self, Duties to School at Large, Health, Manners and



Courtesy, Dress, Leadership, Facts about Occupations, What Am I Getting Out of School, Loyalty, Making Vacation Profitable as Well as Pleasant.

*Assembly.* In every school there should be an assembly. It is better for the programs to feature pupil activity, especially in groups, than for the principal to consume the entire time allotted in the traditional formal type of "chapel" exercise. Programs by grades with an award for the one rendering the most entertaining and instructive exercise is a good idea. Except in very small systems, it is better to have assembly only twice a week, allowing as much as 30 to 40 minutes for the program than to have it daily in 15-minute periods.

### Special Day Programs

The following days should be appropriately observed in all schools:

October	---	Fire Prevention Day.
October	12	Columbus Day.
October	31	Hallowe'en.
November	1	
to March	1	Arbor, Bird, and Tree Days.
November	---	American Education Week.
November	11	Armistice Day.
November	---	Children's Book Week.
November	---	Thanksgiving Day.
December	---	Christmas observance on an appropriate day before the holidays.
January	1	New Year's Day.
January	---	Thrift Day.
January	17	Birthday of Benjamin Franklin.
January	19	Birthday of Robert E. Lee.
January	28	Birthday of Thomas Jefferson.
January	---	Temperance or Law and Order Day.
February	---	Better English Week.
February	12	Birthday of Abraham Lincoln.
February	14	St. Valentine's Day.
February	---	National Week of Song.
February	22	Washington's Birthday.
February	27	Birthday of Henry W. Longfellow.
March	17	St. Patrick's Day.
April	---	Easter.

### Source of Materials for Special Days

#### *Fire Prevention:*

State Department of Insurance, Raleigh, N. C.

#### *Armistice Day:*

American Junior Red Cross, 17th D-E Streets, Washington, D. C.

American Legion, Local Post.

#### *Arbor Day:*

The Wild Flower Preservation Society, Inc., 2740 Oliver St., Washington, D. C.

American Tree Association, 1214 16th St., N. W., Washington, D. C.

#### *Children's Book Week:*

Department of Interior, Bureau of Education, Washington, D. C.

National Association Book Publishers, 25 West 33rd St., New York City.

Children's Book Week Committee, 334 Fifth Ave., New York, N. Y.

*Prevention of Cruelty to Animals:*

American Society for Prevention of Cruelty to Animals, 50 Madison Ave.,  
New York City.

*Thrift:*

Society for Thrift, 9 East 46th St., New York City.

*American Education Week:*

Department of Interior, Bureau of Education, Washington, D. C.

Industrial Arts Co-operative Service, Inc., 1256 Amsterdam Ave., New  
York City.

American Legion, Local Post.

*Other Helpful References:*

The Year Book, 1926-1927. F. A. Owen Publishing Co., Danville, N. Y.

Festivals and Plays, Chubb. Harper and Brothers, New York City.

Great Stories of Great Holidays, Olcott. Houghton-Mifflin and Co.,  
Boston, Mass.

Morning Exercises for All the Year, Sindelar. The Beckeley and Cardy  
Co., 17 E. 23rd St., Chicago, Ill.

The Year's Entertainment, McSee. Owen Publishing Co., Danville, N. Y.

Stories to Tell Children, Bryant. Houghton-Mifflin and Co., 2 Park St.,  
Boston, Mass.

Other books by the following authors will be found helpful: Bailey,  
Richards, Coe, Smith, Long, Lindsay, Stockard and Essenwein, Wiggins,  
Shedlock, Mable.

The State Department of Public Instruction, Raleigh, N. C., supplies the  
following bulletins which will aid in special day programs. They may be  
secured from your County Superintendent's office:

North Carolina Day.

Temperance or Law and Order Day.

Arbor, Bird, and Tree Day.

Armistice Day.

Washington, Lee, Lincoln and Jackson Birthdays.

American Education Week.

**Clubs**

There are clubs which every school should have. Some of these are Glee  
Clubs, Orchestra, Debate, and Dramatics. In a number of schools there  
are others, such as Hi Y, Boy Scouts, Young Tar Heel Farmers. If a school  
wishes to organize more than these it should guard against the all-too-  
prevalent weakness of having too many clubs which exist in name only.  
There follows a list of clubs and source materials for each.

*Health Clubs:*

State Tuberculosis Association, Southern Pines, N. C.

American Red Cross, Local Chapter.

Child Health Organization of America, 370 7th Ave., New York City.

State Board of Health, Raleigh, N. C.

Your County Department of Health.

Modern Health Crusade, 370 7th Ave., New York City.

Bureau of Education, Department of Interior, Washington, D. C.

(Many pamphlets for sale on subject for just few cents.)

American Medical Association, 535 Dearborn St., Chicago, Ill.

State Elementary Course of Study, pp. 513-515.



*Citizenship Clubs:*

Character-Education Institution, Chevy Chase, Washington, D. C.  
Bureau of Education, Washington, D. C.  
National Child Welfare Association, Inc., 70 Fifth Ave., New York City.  
American Junior Red Cross, 17th and E. Sts., Washington, D. C.

*Scout Clubs:*

Boy Scout Headquarters, 200 Fifth Ave., New York City.  
Girl Scouts of America, 189 Lexington Ave., New York City.

*Parent-Teacher Association:*

State President—Mrs. Raymond Binford, Guilford College, N. C.  
Corresponding Secretary—  
National Congress of Mothers and Parent-Teacher Association, Washington, D. C.

*Art:*

- a. State Picture Appreciation Contest—
  1. Miss Susan Fulghum, State Department of Public Instruction, Raleigh, N. C.
  2. Miss Mamie Marlin, State Chairman Art Appreciation Organization, Woman's Club, Raleigh, N. C.
- b. Books—
  1. Parsons, Interior Decoration. Doubleday, Garden City, N. Y.
  2. Izor, Costume Design and Home Planning. Mentzer-Bush Co., New York City.

*Dramatics:*

Information may be obtained from:

Division of Extension Work, University of North Carolina, Chapel Hill, N. C.  
Division of Extension Work, North Carolina College for Women, Greensboro, N. C.

*Music:*

- a. State Contests—
  1. Miss Hattie S. Parrott, State Department of Public Instruction, Raleigh, N. C.
  2. Mrs. E. E. Randolph, Woman's Club, Raleigh, N. C.
  3. Dr. Wade Brown, Music Department, North Carolina College for Women, Greensboro, N. C.
- b. Bulletin No. 49, Music in Secondary Schools. U. S. Bureau of Education, Washington, D. C.

*Young Tar Heel Farmers:*

Mr. Roy H. Thomas, State Department of Public Instruction, Raleigh, N. C.

*Debate:*

Mr. E. R. Rankin, Division of Extension, University of North Carolina, Chapel Hill, N. C.  
(Consult bibliography on debate in one of the Extra-curricular activities books listed on page 43.)

*Athletics:*

Information:

Mr. E. R. Rankin, Division of Extension, University of North Carolina, Chapel Hill, N. C.  
Mr. G. B. Phillips, President Girls Athletic Association of North Carolina, Superintendent of Schools, Greensboro, N. C.  
"Physical Education in the High School," Educational Publication No. 104, State Department of Public Instruction, Raleigh, N. C.  
This bulletin may be secured from your superintendent.  
Bowen & Mitchell—The Practice of Organized Play. A. S. Barnes & Co., New York City.

Staley—Games, Contests, and Relays. A. S. Barnes & Co., New York City.  
 Forbush & Allen—The Book of Games. The John C. Winston Co.,  
 Chicago, Ill.

Mitchell—Intramural Athletics. A. S. Barnes & Co., New York City.  
 Physical Education Pamphlet of National Parent-Teacher Association,  
 1201 Sixteenth St., Washington, D. C.

In all high schools the physical education program should emphasize the participation of all rather than intensive training for the few, and devote more attention to intra-mural athletics.

## THE PROFESSIONAL LIBRARY

The growth of an individual in the teaching profession is determined to a large extent by his professional reading. It would be an excellent plan for each principal to devote of his first teachers' meetings to the topic of professional growth and effect an organization whereby he and his teachers could pool in one section of the library their best books on education and order collectively such periodicals and additional books as would most likely contribute toward their specific objectives for the year.

Some of the best and most up-to-date books and periodicals for both principal and teacher are listed here.

### For High School Principals

#### BOOKS

##### *Organization and Administration—*

- Cubberley, State School Administration, 1927. Houghton.  
 Cubberley, The Principal and His School, 1923. Houghton.  
 Johnson, F. W., Administration and Supervision of the High School, 1925. Ginn.  
 Douglass, Secondary Education, 1927. Houghton.  
 Cook, Federal and State School Administration, 1927. Crowell.  
 Engelhardt and Engelhardt, Public School Business Administration, 1927. Teachers College.  
 Almack, The School Board Member, 1927. Macmillan.  
 Cardinal Principles of Secondary Education (Indispensable). U. S. Bureau of Education, Washington, D. C.  
 Koos, The American Secondary School, 1927. Ginn.  
 Uhl, Principles of Secondary Education, 1925. Silver.  
 Belting, The Community and Its School, 1923. Heath.  
 Inglis, Principles of Secondary Education, 1918. Houghton.  
 Eikenberry, Status of the High School Principal, 1925. Bulletin No. 24, U. S. Bureau of Education, Washington, D. C.  
 Gist, A. S., Administration of An Elementary School, 1928. Scribners.  
 Mort, P. R., The Individual Pupil in the Management of Class and School, 1928. American.  
 N. E. A., Seventh Yearbook of the Department of Elementary School Principals, 1928. National Education Association.

##### *Supervision—*

- Ayer and Barr, The Organization of Supervision, 1928. Appleton.  
 Barr and Burton, Supervision of Instruction, 1926. Appleton.  
 Shreve, Supervised Study Plan of Teaching, 1927. Johnson.  
 Nutt, The Supervision of Instruction, 1920. Nutt.  
 Morrison, The Practice of Teaching in Secondary School, 1926. University of Chicago Press.



*Junior High School—*

- Briggs, *The Junior High School*, 1920. Houghton.  
 Davis, *Junior High School Education*, 1924. World.  
 Bruner, *The Junior High School at Work*, 1926. Teachers.  
 Lyman and Cox, *Junior High School Practices*, 1925. Laidlaw.

*The Curriculum—*

- N. E. A., *Sixth Yearbook of the Department of Superintendence* (H. S. Curriculum), 1927. National Educational Asso.  
 Charters, *Curriculum Construction*, 1923. Macmillan.  
 Briggs, *Curriculum Problems*, 1924. Macmillan.  
 Bobbitt, *How to Make a Curriculum*, 1924. Houghton.  
 Clement, *Curriculum Making in Secondary School*, 1923. Holt.  
 Cox, *Curriculum Adjustment in the Secondary School*, 1925. Lippincott.  
 Hines, *Junior High School Curricula*, 1924. Macmillan.  
 Harap, *The Technique of Curriculum Making*, 1928. Macmillan.

*Philosophy and Psychology of Education—*

- National Society for the Study of Education, 27th Yearbook (Nature vs. Nurture), 1928. Public School Pub. Co.  
 Dewey, *Democracy and Education*, 1916. Macmillan.  
 Moore, *What is Education*, 1915. Ginn.  
 Kilpatrick, *Foundations of Method*, 1925. Macmillan.  
 Plato, *The Republic*, 1904. Macmillan.  
 Rousseau, *Emile*, 1893. Appleton.  
 Spence, *Essays on Education*, 1920. Appleton.  
 Gates, *Psychology for Students of Education*, 1923. Macmillan.  
 Judd, *Psychology of Secondary Education*, 1927. Ginn.  
 Kornhauser, *How to Study*, (25c), 1924. University of Chicago Press.  
 (Some excellent suggestions for students.)  
 Jordan, *Educational Psychology*, 1928. Holt.

*Tests and Measurements—*

- Symonds, *Measurement in Secondary Education*, 1927. Macmillan.  
 Ruch and Stoddard, *Tests and Measurements in High School Instruction*, 1927. World.  
 Trabue, *Measuring Results in Education*, 1924. American.  
 Otis, *Statistical Method in Educational Measurement*, 1925. World.  
 Ryan and Crecelius, *Ability Grouping in the Junior High School*, 1927. Harcourt.  
 Garrett, *Statistics in Psychology and Education*, 1927. Longmans.  
 Hull, *Aptitude Testing* (handbook for Vocational Guidance), 1928. World.  
 Goddard, *Exceptional Children*, 1928. World.

*Extra-Curricular Activities—*

- McKown, *Extra-Curricular Activities of the Secondary School*, 1927. Macmillan.  
 Meyer, *A Handbook of Extra-Curricular Activities in the High School*, 1927. Barnes.  
 Foster, *Extra-Curricular Activities in the High School*, 1925. Johnson.

*Vocational Guidance and Information—*

- Proctor, *Educational and Vocational Guidance*, 1925. Houghton.  
 Myers, *The Problem of Vocational Guidance*, 1927. Macmillan.  
 Peeter, *Syllabus of Vocational Guidance*. Macmillan.

*School Publicity—*

- Alexander, *Public Opinion and the School—School and Society*, Dec. 16, 1916.  
 Alexander, *The Continuous School Publicity Program—School and Society*, Jan. 3, 1925. (Distinguishes the drive from continuous publicity program, with several topics that may be used in the latter.)  
 Alexander and Theisen, *Publicity Campaigns for Better School Support*, 1921. World. (Deals chiefly with the conduct of school drives for increased school appropriations.)

Educational Research Bulletin, College of Education, Ohio State University, Columbus, O., April 16, 30, 1924; Oct. 1924. (Contains a long and excellent list of news items actually published about schools in the daily press of Ohio, with suggestions for each month.)

Garlin and Pittinger, Educational Publicity in Daily Newspapers, School Board Journal, Dec. 1921. (Classification of articles dealing with educational matters in a representative daily paper of Texas over a period of one year.)

Miller and Charles, Publicity and the Public Schools. Houghton. (An excellent monograph dealing with the various avenues of publicity, especially the school system, the newspapers, student publications, and miscellaneous points of contact with the public.)

#### *Miscellaneous—*

Weicking, Education Through Manual Activities, 1928. Ginn.

Logasa, The High School Library: Its Function in Education. Appleton.

Dorris, Visual Education in Public Schools, 1928. Ginn.

Myers and Bird, Health and Physical Education, 1928. Doubleday, Doran.

#### *Buildings and Service Systems—*

Bulletin No. 24, 1922, The Work of the School Janitors (15c). U. S. Bureau of Education, Washington, D. C.

Bulletin No. 23, 1922, High School Buildings and Grounds (15c). U. S. Bureau of Education, Washington, D. C.

Strayer and Engelhardt, Standards for High School Buildings (80c), 1924. Teachers College.

Engelhardt, Standards for Janitorial Service, 1928. Teachers College.

Reeves, C. E. and Ganders, H. S., School Building Management, 1928. Teachers College.

For specific suggestions regarding construction of new buildings, the renovation of old ones, playground equipment, and beautification of grounds, address: Mr. John J. Blair, Director Division of School-house Planning, State Department of Public Instruction, Raleigh, N. C.

#### *Guides to Sources of Information on Educational Problems—*

Alexander, Educational Research (80c), 1926. Teachers College. Contains specific suggestions regarding source materials on all educational subjects and other helpful data.

Monthly Record of Educational Publications. U. S. Bureau of Education. A valuable source of information concerning recent magazine articles on educational problems. (May be secured free.)

Readers Guide. The H. W. Wilson Co., N. 58-972 University Ave., New York City. Gives carefully arranged list of references on more important educational problems.

U. S. Bureau of Education, Library Leaflets.

Wright, Edith A. List of Bulletins of the U. S. Bureau of Education, 1906-1922. U. S. Bureau of Education Bulletin, 1923, No. 35.

Good, C. V., How to Do Research in Education, 1928. Warwick and York.

#### PERIODICALS

	Price
1. Educational Administration and Supervision, Baltimore, Md.	\$3.00
2. Teachers College Record, Columbia University, N. Y.	2.50
3. Journal of Rural Education, 525 W. 120th St., New York	3.00
4. School and Society, Science Press, Garrison, N. Y.	5.00
5. Education, 12 Boylston St., Boston, Mass.	4.00
6. Journal of Education, 6 Beacon St., Boston, Mass.	3.00
7. Journal of Educational Research, Bloomington, Ill.	4.00
8. National Education Association Journal, 1201 W. 16th St., Washington, D. C.	3.00
9. English Journal, 506 W. 69th St., Chicago, Ill.	3.00



- |   |      |
|---|------|
| 10. The Scholastic, Scholastic Publishing Co., Wabash Bldg., Pittsburgh, Pa. .... | 2.00 |
| 11. Playground, 1 Madison Avenue, New York City.....                              | 2.00 |
| 12. High School Journal, University, Chapel Hill, N. C.....                       | 1.50 |
| 13. School Review, Department of Education, University of Chicago, Ill. ....      | 3.00 |
| 14. School and Home, Atlanta, Ga. ....  | 1.00 |

### For High School Teachers—General

#### Books—

- Shreve, Supervised Study Plan of Teaching, 1927. Johnson.  
 Strayer and Engelhardt, The Classroom Teacher, 1920. American.  
 Waples, Procedures in High School Teaching, 1924. Macmillan.  
 Parker, Methods of Teaching in High School, 1920. Ginn.  
 Colvin, Introduction to High School Teaching, 1917. Macmillan.  
 Douglass, Modern Methods in High School Teaching, 1927. Houghton.  
 Cardinal Principles of Secondary Education (indispensable). U. S. Bureau of Education, Washington, D. C.  
 Waples, Problems in Classroom Method, 1927. Macmillan.  
 Brownell, A Study of Supervised Study, Bulletin No. 41, Vol. 22, June, 1925. University of Illinois.  
 Cubberley, An Introduction to the Study of Education, 1925. Houghton.  
 Morrison, The Practice of Teaching in the Secondary School, 1926. University of Chicago Press.  
 Wright, List of Books for a Teachers' Professional Library (5c). Superintendent of Documents, Department of Interior, Washington, D. C.  
 Monroe and Weber, The High School (for inexperienced teachers), 1928. Doubleday, Doran.  
 Fontaine, Ways to Better Teaching in the Secondary School, 1928. Ginn.  
 Thayer, The Passing of the Recitation (evaluates Dalton and Winnetka plans, Socialized recitation and Project method), 1928. Heath.

#### Periodicals—

- |   |        |
|---|--------|
|   | Price  |
| North Carolina Teacher, Raleigh, N. C.....  | \$2.00 |
| National Education Association Journal, 1201 Sixteenth St., Washington, D. C. ....  | 2.00   |
| Teachers College Record, Columbia University, New York.....   | 2.50   |
| American Physical Education Review, 93 Westford Avenue, Springfield, Mass. ....   | 3.50   |
| Peabody Journal of Education, George Peabody College for Teachers, Nashville, Tenn. ....  | 2.00   |
| High School Quarterly (official publication of Southern Association of Secondary Schools and Colleges), Jos. S. Stewart, Editor, Athens, Ga. .... | 1.00   |
| Bulletin of High Points in the Work of the High Schools of New York City, 500 Park Ave., New York City.....                                       | Free   |

### For High School Teachers—By Subject

#### ENGLISH

#### Books—

- Thomas, Teaching of English in the Secondary School, 1917. Houghton.  
 Reorganization of English in Secondary Schools. U. S. Bureau of Education, Bulletin, 1917, No. 2.  
 Carpenter, Baker, and Scott, The Teaching of English, 1903. Longmans.  
 Chubb, The Teaching of English, Macmillan.  
 Bolenius, Teaching English in the Grammar Grades and High School, 1915. Houghton.  
 Brewer, Oral English, Ginn.  
 Palmer, Self-Cultivation in English. Houghton.  
 Inglis, Principles of Secondary Education, Chapter XII, 1918. Houghton.  
 Woodring and Benson, Enriched Teaching of English in the High School, 1927. Teachers College. (A source book of illustrative and supplementary materials.)  
 Hawley, Teaching English in Junior High Schools, 1924. Houghton.

*Periodicals—*

- English Journal, University of Chicago Press, Chicago, Ill.  
 Correct English, How to Use It, Evanston, Ill.  
 Quarterly Journal of Speech Education, University of Chicago Press,  
 Chicago, Ill.  
 Drama Quarterly, Riggs Bldg., Washington, D. C.

## SOCIAL STUDIES

*Books—*

- Hartwell, The Teaching of History. Houghton.  
 Haynes, Economics in Secondary Schools. Houghton.  
 The Social Studies in Secondary Education. U. S. Bureau of Education,  
 Bulletin, 1916, No. 28.  
 The Teaching of Community Civics. U. S. Bureau of Education, Bulletin,  
 1915, No. 23.  
 State Report, The Teaching of Social Studies. Department of Education,  
 Trenton, N. J.  
 Barnard et al, The Teaching of Community Civics. U. S. Bureau of  
 Education, Washington, D. C.  
 Bunn, Civic Education in Elementary Schools. U. S. Bureau of Education,  
 Washington, D. C.  
 Johnson, The Teaching of History, 1915. Macmillan.  
 Bourne, The Teaching of History and Civics, 1915. Longmans.  
 Inglis, Principles of Secondary Education, Chapter XVI, 1918. Houghton.

*Periodicals—*

- Journal of American History (quarterly), 37 W. 39th St., New York City.  
 Historical Outlook (formerly History Teachers' Magazine), McKinley  
 Publishing Co., Philadelphia, Pa.  
 Journal of Geography, Broadway and 165th St., New York City.  
 American Political Science Review, Madison, Wis.  
 Ohio History Teachers' Journal (quarterly), Ohio State University, Columbus,  
 Ohio.  
 American Journal of Sociology, University of Chicago Press, Chicago, Ill.  
 Quarterly Journal of Economics, Harvard University Press, Cambridge,  
 Mass.

## FOREIGN LANGUAGES

*Books—*

- Krause, The Direct Method in Modern Languages, 1916. Scribners.  
 Jespersen, How to Teach a Foreign Language, 1923. Allen.  
 Elliott et al, Methods of Teaching Modern Language. Heath.  
 Bahlsen, The Teaching of Modern Languages. Ginn.  
 Handschin, Methods of Teaching Modern Languages, 1923. World.  
 Bennett and Bristol, The Teaching of Latin and Greek, 1901. Longmans.  
 Garne, Teaching High School Latin. University of Chicago Press.  
 Inglis, Principles of Secondary Education, Chapter XIII, 1918. Houghton.  
 Bobbitt, The Curriculum, Chapter XX, 1918. Houghton.  
 Wilkins, Spanish in the High School. Sanborn.  
 Game, Teaching High School Latin. University of Chicago Press.

*Periodicals—*

- Foreign Languages, Classical Journal, University of Chicago Press,  
 Chicago, Ill.  
 Classical Weekly, Barnard College, New York City.  
 Modern Language Teaching, London, England.  
 Le Petit Journal, Doubleday, Page and Co., Garden City, N. Y.  
 The Modern Language Journal, National Federation of Foreign Language  
 Teachers (monthly), C. H. Handschin, Miami University, Oxford, O.



## NATURAL SCIENCE

*Books—*

- Reorganization of Science in Secondary Schools. U. S. Bureau of Education, Bulletin, 1920, No. 26.  
 Twiss, Principles of Science Teaching, 1917. Macmillan.  
 Eikenberry, The Teaching of General Science, 1922. University of Chicago Press.  
 Lloyd & Bigelow, The Teaching of Biology, 1904. Longmans.  
 Smith and Hall, The Teaching of Chemistry and Physics. Longmans.  
 Armstrong, The Teaching of Scientific Method. Macmillan.  
 Mann, The Teaching of Physics, 1925. Macmillan.  
 Monroe, Principles of Secondary Education, Chapter XII, 1914, by Twiss. Macmillan.

*Periodicals—*

- Journal of Physical Chemistry, Ithaca, N. Y.  
 General Science Quarterly, Salem, Mass.  
 School Science and Mathematics, Mount Morris, Ill.  
 Nature Study Review, Ithaca, N. Y.  
 High School Science Review, (quarterly), Austin, Texas.  
 The Science Classroom, Popular Science Pub. Co., 250 Fourth Ave., New York, N. Y.

## MATHEMATICS

*Books—*

- The Problem of Mathematics in Secondary Education. U. S. Bureau of Education, Bulletin, 1920, No. 1.  
 Schultze, Teaching of Secondary Mathematics, 1912. Macmillan.  
 Young, The Teaching of Mathematics, 1924. Longmans.  
 Smith, The Teaching of Elementary Mathematics. Macmillan.  
 Smith, The Teaching of Geometry. Ginn.  
 Snedden, Sociological Determination of Objectives in Education, Chapter VI. Lippincott.  
 Inglis, Principles of Secondary Education, Chapter XIV, 1918. Houghton.

*Periodicals—*

- American Mathematical Monthly, Lancaster, Pa.  
 Mathematics Teacher (quarterly), Syracuse, N. Y.  
 School Science and Mathematics, Mt. Morris, Ill.  
 The Mathematics Teacher, National Council of Teachers of Mathematics (monthly), Lancaster, Pa.

## PHYSICAL EDUCATION

*Periodicals—*

- American Journal of School Hygiene, Worcester, Mass.  
 American Physical Education Review, 93 Westford Ave., Springfield, Mass.  
 Physical Training, 347 Madison Ave., New York City.  
 Physical Education in the High School, (pamphlet), State Department of Public Instruction, Raleigh, N. C.

## COMMERCIAL EDUCATION

*Periodicals—*

- Business Educator (Professional Edition), Columbus, Ohio.  
 American Shorthand Teacher, Gregg Publishing Co., Chicago, Ill.

## MANUAL ARTS

*Periodicals—*

- Manual Training Magazine, Manual Arts Press, Peoria, Ill.  
 Industrial Arts Magazine, 129 Michigan St., Milwaukee, Wis.

## ART

*Periodicals—*

- Art, American Magazine of Arts, 1741 New York Avenue, Washington, D. C.  
 School Arts Magazine, 120 Boylston St., Boston, Mass.

## LIST OF PUBLISHERS

Allen—George Allen and Co., London.  
Appleton—D. Appleton & Co., New York City.  
Barnes—A. S. Barnes & Co., New York City.  
Chicago—University of Chicago Press, Chicago, Ill.  
Crowell—Thomas Y. Crowell & Co., New York City.  
Doubleday—Doubleday, Doran & Co., Garden City, N. Y.  
Dutton—E. P. Dutton & Co., New York City.  
Ginn—Ginn & Co., New York City.  
Harcourt—Harcourt, Brace and Co., New York City.  
Heath—D. C. Heath & Co., New York City.  
Holt—Henry Holt & Co., New York City.  
Houghton—Houghton-Mifflin Co., Boston, Mass.  
Johnson—Johnson Publishing Co., Richmond, Va.  
Lippincott—J. B. Lippincott & Co., New York City.  
Longmans—Longmans, Green & Co., Boston, Mass.  
Macmillan—The Macmillan Co., New York City.  
Public School Publishing Co., Bloomington, Ill.  
Row—Row, Peterson & Co., New York City.  
Sanborn—Benjamin H. Sanborn & Co., New York City.  
Scribners—Charles Scribners Sons, New York City.  
Teachers—Teachers College Publications Bureau, Columbia University, New York City.  
World—World Book Company, Yonkers, N. Y.

## THE PRINCIPALSHIP

As the principal, so is the school! This adage was never more true than when applied to the principal. He and the janitor can virtually make or break any school system.

The non-teaching duties of the principal, as classified by Cubberley, are those pertaining to (1) Organization, (2) Administration, (3) Social Activities, (4) Supervision. The amount of time that can be spent on these activities is determined by the size of the school and the curriculum adopted. In this connection, each principal should make such legitimate adjustments in the daily schedule as to allow some time to devote to the larger aspects of his position.

The organization suggested for small high schools in the *Reorganization program* assigns the principal a full teaching load which naturally limits his supervisory activities. In some instances, however, shifts of classes can be made into logical subject combinations which will lighten the principal's teaching load and give him time for other duties. Take, for example, the 4-A curriculum for a four-teacher high school on page 57. Suppose the eighth grade classes are small enough to be taught in one section instead of two, as are provided in the schedule. The principal should be given the benefit of the reduction in the number of classes. If the principal is "Teacher C," Mathematics I could be taught in one section, Science IV shifted to "Teacher D," and the recitation part of Science I taught in one section. This shift would work no hardship on "Teacher D," and would give "Teacher C," the principal, four periods per day free for non-teaching duties. Assuming that one or two periods were used in conducting study halls, there would still be left some time for administrative and supervisory duties.



## DUTIES OF THE PRINCIPAL

*I. Pertaining to Organization.*

- A. Familiarize himself with educational conditions in the State.
  - 1. State school laws.
  - 2. Rules regarding accrediting.
  - 3. Approved lists of text-books.
  - 4. Conference with State school officials, if possible.
  - 5. Examination of State Superintendent's report.
  - 6. State course of study.
- B. Acquaint himself with local conditions.
  - 1. Size.
  - 2. Character of population.
  - 3. Wealth.
  - 4. Expenditure for schools.
  - 5. Railroads, commerce, industry.
  - 6. Peculiar social and educational problems.
  - 7. Characteristics of his own and adjacent district.
  - 8. Examination of previous annual report.
- C. Conference with superintendent or assistant superintendent.
  - 1. General policies from superintendent.
  - 2. Objectives of school for the year.
  - 3. Outline of duties and responsibilities.
  - 4. Determine qualifications of teachers.
- D. Inspection of buildings and grounds.
  - 1. Makes notes for information and guidance.
    - a. Office.
      - 1. Desk—contents.
      - 2. Cabinets, files, working material.
      - 3. Stores, supplies, books.
    - b. Rooms—classrooms, special service rooms.
      - 1. Seating facilities, classrooms, library, cafeteria, auditorium.
      - 2. Light, ventilation and other physical conditions.
      - 3. Number and condition of hallways, toilets, lockers and cloakrooms.
      - 4. Adequacy of service system.
    - c. Grounds.
      - 1. Size, location.
      - 2. Streets and crossings.
      - 3. Playground apparatus.
- E. Records and Forms.
  - 1. Types.
    - Individual pupil records, achievement, health, etc.
    - Teachers' reports, registers, grades, etc.
    - Principals' reports, to State Superintendent, etc.
    - Miscellaneous—age-grade, financial, etc.
- F. Registration.
  - 1. Examine pupil pre-registration cards.
  - 2. Rework daily schedule made by previous principal.
  - 3. Publish date of registration for new students.
  - 4. Register new students.
  - 5. Revise daily schedule and make up class lists.
  - 6. Make up teacher hour-room schedule.
- G. Teachers Meeting.
  - 1. Preliminary conference with new teachers regarding school policies, rules and regulations, records, etc.

2. Entire staff meeting.
  - a. Brief resumé of general regulations which need amplification.
  - b. Plan of management for first day.
  - c. Details of classroom organization.
  - d. Statement of major aims for year.
  - e. Mimeographed list of administrative details.
  - f. Provide teachers with class lists.
  - g. Explain card forms and data to be obtained from children.
- H. Plan for First Day.
  1. Assign teachers.
    - a. Transfers.
    - b. New students.
    - c. Information.
  2. Provide student guides and messengers.
  3. Principal to be free for general administrative duties.
  4. Proper signs should be posted regarding distribution of students of various qualifications and classifications.
  5. Provide for ten minute periods with teachers meeting in the afternoon
    - a. To straighten conflicts.
    - b. To check up on missing students.
    - c. Difficulties of teachers in seating, etc.
  6. Start second day on regular schedule.
- I. Classification of Pupils.
  1. Provide for homogeneous grouping—rapid moving, average moving, slow moving, special or ungraded groups.
  2. Basis of classification—chronological age, mental age, physical conditions, teacher's judgment, home conditions, attendance.
  3. New student classification—individual attention.
  4. Systematic attention to pupils—studies of individuals—needs and differences, conferences with pupils, teachers, and parents, remedial work, outside help.
  5. Records—accurate accumulative cards, health, activity, achievement, and others which may be necessary.

## *II. Pertaining to Administration.*

- A. Business.
  1. Office.
  2. Supplies.
  3. Budget.
  4. Forms.
  5. Relations with central office.
- B. The Janitor.
  1. Qualities.
  2. Duties.
  3. Standards and schedules.
  4. Principal's relation to.
  5. Inspection of.
  6. As helper.
- C. Principal's relations to janitor.
  1. Train him carefully.
  2. Gain his friendship.
  3. Welcome his suggestions.
  4. Supply adequate working materials.
  5. Protect him from fussy teachers.
  6. Cultivate feeling of pride and ownership in building.
  7. Train pupils and teachers to keep things clean.
  8. Listen to his suggestions.
  9. Make him responsible only to principal.
  10. Inspect his work daily.



## D. Janitorial supervision.

1. Condition of classrooms, floors, desks, chalk, blackboards, windows, cloakrooms, etc.
2. Special rooms—music, home economics, etc.
3. Toilets—marks on walls, floor, fixtures, paper towels, free from odors.
4. Basements—clean, free from rubbish.
5. Halls and stairs—clean, free from obstruction.
6. Overnight damage to building and grounds.
7. Grounds—free from litter, play apparatus.

## E. Health and Sanitation.

1. Child and hygiene—biological viewpoint, relation of physical growth to educational process.
2. Factors—general laws of growth, malnutrition, common diseases, possible evil effects of school life, physical defects.
3. Health teaching—daily inspection for cleanliness, health drives, propaganda, health talks at assembly, first aid demonstration, first aid kit.
4. Other agencies—Boy Scouts, Campfire Girls, school health departments, Junior Health League, Junior Red Cross, school nurse (by special work such as instructing teachers).

## F. Discipline.

1. Don't look for trouble. Spend majority of time in remedial rather than corrective measures. Provide an abundance of wholesome recreational facilities.
2. Principal should handle most serious cases that arise on playground and around school.
3. All trivial classroom disturbances should be handled by teacher; however, teachers should feel free to consult principal on serious disciplinary problems.

## G. Attendance.

1. Investigate cause of absence—sickness, ignorance of law, truancy; lack of interest in school (perhaps most important).
2. Make use of attendance and welfare officers.

*III. Pertaining to Social Duties.*

A Principal's social duties consist of the direction of the program of Extra-Curricular Activities. In this matter he should delegate detail work to his teachers and make his own contribution through direction and guidance.

For a full statement see discussion of Extra-Curricular Activities, page 38.

*IV. Pertaining to Supervision of Instruction.*

## A. Direct.

1. Teachers' meetings—discussion of standard tests, new type examinations, professional publications, various teaching methods, discipline, motivation of learning, individual differences, transfer of training (extent and implications), aims, cardinal principles, pupil activity, lesson assignment.
2. Classroom visitation and conference.

## B. Indirect.

1. Intervisitation of teachers, demonstration teaching, classification of pupils, homogeneous grouping, professional standards, suggestion relative to recent scientific educational theory, corrective measures for pupils, individual weaknesses, lesson assignment.

## PRINCIPLES OF ORGANIZATION AND ADMINISTRATION UNDER THE REORGANIZATION PLAN

1. *Selecting a Curriculum.* Schools having from 3 to 6 teachers should select the curriculum best adapted to their needs and follow it. If there is only one high school teacher not over two years of high school work may be offered. In this case the first two years of the curriculum for a three-teacher high school on page 55 should be followed. If there are two high school teachers, three years of the curriculum for a three-teacher school may be given.

2. *Follow Curriculum Adopted.* Once a particular curriculum is introduced a change to another should not be made without the approval of the county superintendent and notification of the State High School Inspector.

3. *Continue Language Adopted.* Three- and four-teacher high schools which offer two units of only one foreign language must not offer Latin one year and French the next; the language adopted must be continued.

4. *Employment of Teachers.* Teachers should be employed in accordance with the particular subject combinations outlined in the "Suggested Organization" following each curriculum.

5. *Principal Recommends Teachers.* Teachers should be employed by the school committee only upon recommendation of the principal and approval of the county superintendent.

6. *Teaching Load.* No teacher should be assigned more than six periods a day nor less than five, but each teacher should be assigned some duty every period during the day.

7. *Delegate Direction Extra-Curricular Activities.* Principals should delegate the direction of extra-curricular activities to teachers so as to make time for supervision.

8. *Substitute Teachers.* Substitute teachers should be engaged by the principal instead of the teachers for whom they substitute. Their salary should be determined by training and experience, and be conditioned by such further rules and regulations as may be set up by the county board of education.

9. *Plan for Period of Years.* Both principal and teachers should make plans for the school which cover a period of years rather than terminate on Commencement day. If this were done there would be a marvelous transformation in the appearance of school buildings and grounds.

10. *Classrooms for Particular Subjects.* All of a particular subject should be taught in the same room. Supplementary materials should be supplied in order to give the child the apperceptive basis for study. The history room, for instance, should be well provided with maps, the English room with pictures of great writers, etc.

11. *Finding Rooms for Library and Laboratory.* Inadequate building space for the library and laboratory in small systems which are over-crowded can be solved, in many instances. Take, for example, a four-teacher high school which has available only 4 classrooms and is confronted with the necessity of scheduling the classes of 4 different grades and, in addition,



providing for library and laboratory work. Obviously, there would be no solution if one were to adhere to the traditional practice of having all the subjects of each grade in the same room throughout the day; for then a room would be used for recitation purposes for only four-sevenths of the day, assuming a 7-period day and a 4-subject pupil. But if this system were to schedule on the following basis there would be no difficulty arising from lack of space: in room No. 1, teach the four classes of English and two of Foreign Language, total six classes; in room No. 2, teach the three classes of Mathematics and four of History—total, 7 classes; in room No. 3, have lecture and laboratory for the sciences (equip with tables and chairs or stools, not desks or arm chairs); in room No. 4, have reading (reference books and periodicals) and study hall (provide standard shelving, tables, and chairs, not desks).

12. *When to Divide a Class.* Classes with an average daily attendance of over 30 should be taught in 2 or more sections. In science laboratory work approximately 20 pupils is the maximum.

13. *Pupil Load.* No pupil should be allowed to take over 4 subjects unless he is in the upper decile of his class or is both over-aged and intelligent. As a rule, it is better to provide enrichment than to accelerate.

14. *How to Study.* Whatever the type of school or organization, definite provision should be made for teaching children how to study and causing them to do more of it. (See reference to Kornhauser, p. 43.)

15. *The Hour Period.* In no case should recitation periods be less than 45 minutes in the clear. Schools wishing to organize on the hour-period supervised study plan may do so, provided the principal and the teachers are qualified to operate on such a basis and it is approved by the county superintendent and the State High School Inspector. Under this plan there should be at least a 6-hour period day, one of which may be used for extra-curricular activities. In order to give a unit's credit on Science, there should be each week 3 one-hour recitation periods and 2 one-hour laboratory periods. In both Home Economics and Agriculture a unit's credit may be given on a basis of 5 one-hour periods per week; however, in Agriculture it is recommended that, if possible, an extra period for shop be provided one afternoon each week.

16. *Credit for Arithmetic.* At least 16 units should be required for graduation. A half unit's credit may be given toward graduation for 8th grade Arithmetic and still have one-half of a unit in the clear, as virtually all colleges require only 15 units for entrance.

17. *Credit for Extra-Curricular Activities.* If unit credit is to be allowed for any extra-curricular activity, it should be given in excess of the 16 basic units required for graduation.

18. *Admission of Pupils from Other Schools.* Pupils should not be admitted from neighboring schools on "face value." The basis for admission should be a bonafide transcript or entrance examination. In estimating the value of a transcript, a unit's credit should be given on the basis of 120 clock hours of satisfactory recitation work. (For explanation of a "unit" see p. 31.) Uniform transcript blanks furnished by the State may be had upon application to the county superintendent.

19. *Plane Geometry Elective.* Although plane geometry is elective, pupils should be encouraged to take it if they wish to enter a college which requires it.

20. *Guidance and Vocational Information.* In electing studies, pupils should consult the home room teacher, principal, and parents. This is a matter for which ample time should be given. It should never be deferred until the opening day of school. Consult bibliography on Vocational Information and Guidance, page 43.

21. *Registration of Pupils.* The best time to register pupils for the Fall term is in the spring about a month before commencement. The registration card for each pupil should show the subjects he is now taking and the ones he elects, specifying the number of room and period each will come. Adjustments due to failure in particular subjects can be worked out in the summer.

22. *Graduation and College Entrance Requirements.* Acquaint the pupils with the requirements for graduation and with entrance requirements of higher institutions in which they are likely to be interested. A definite statement of graduation requirements accompanies each curriculum.

23. *Vocational Subjects.* Pupils who complete a four-year course in Agriculture or an approved two-year Commercial Course are not required to offer any foreign language work in meeting the requirements for graduation. Girls who take the two-year course in Home Economics must have in addition at least two units in foreign language before being graduated. For particulars relative to the organization of courses in Agriculture and Home Economics, write Director T. E. Browne, Division Vocational Education, Raleigh, N. C. A curriculum for a six-teacher high school including a course in Commercial Education appears on page 77.

24. *Daily Schedule for Irregulars.* The daily schedule should have no conflicts for regular pupils. Sometimes in small systems conflicts for irregulars are inevitable. In such instances it is best, of course, to serve the majority. But in schools large enough to have two sections or more of any classes, schedules can be made which will care for everybody.



# THE REORGANIZATION PROGRAM

## SUGGESTED CURRICULA, ORGANIZATIONS, AND SCHEDULES

The following curricula are suggested for high schools ranging from 3 to 6 teachers. A plan of organization and schedule are suggested for each curriculum. These curricula will meet the needs of the great majority of the high schools of the State. In high schools having more than six teachers the needs of such schools are to be met by the addition of new lines of instruction; for example, the introduction into such schools of Smith-Hughes trade work, music, the fine arts and physical education, each calling for a teacher of high special training.

### I. THREE-TEACHER HIGH SCHOOL

(Average Daily Attendance, 45 to 74)

#### A. Suggested Four-Year Curriculum

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	History II—Modern European .....	5	5
Science I—General .....	7	5	Science II—Biology .....	7	5
	22	20		22	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I .....	5	5	Latin II or French II .....	5	5
Electives (two):			History IV—United States History .....	5	5
Mathematics III—Plane Geometry .....	5	5	Science IV—Physics .....	7	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5			
History III—Ancient and Medieval .....	5	5			
	20 or 22	20		22	20

#### B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I .....	5	History I .....	5
English II .....	5	History II .....	5
English III .....	5	History III or IV .....	5
English IV .....	5	Mathematics I .....	5
Latin I or French I .....	5	Mathematics II .....	5
Latin II or French II .....	5		
	30		25

<i>Teacher C</i>	<i>Periods Per Week</i>
Science I .....	7
Science II .....	7
Science III or IV .....	7
Mathematics III .....	5

26

One of the teachers employed should have specialized in English and Latin or in English and French; one, in History and a second field.

The school may elect to teach either Latin or French, but a high school of this size should not offer *both* Latin and French.

Requirements for graduation: English 4; Mathematics 2; \*Social Science 3; Science 3; Foreign Language 2; Elective 2. Total, 16 units.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C
8:45-9:00	OPENING EXERCISES		
9:05-9:50	Latin I or French I	History II	Science I Recitation, M. W. F. Laboratory, T. T.
9:55-10:40	English III	Mathematics II	Science I Laboratory, T. T.
10:45-11:30		History I	Science III or IV Recitation, M. W. F. Laboratory, T. T.
11:35-12:20	English II	Mathematics I	Science III or IV Laboratory, T. T.
12:20-1:00	NOON RECESS		
1:05-1:50	English I	History III or IV	Science II Recitation, M. W. F. Laboratory, T. T.
1:55-2:40	Latin II or French II		Science I Laboratory, T. T.
2:45-3:30	English IV		Mathematics III

Each recitation period must be 50 minutes in length with 45 minutes in the clear, allowing 5 minutes for changing classes. It is necessary to have 45 minutes for actual class work in each recitation period in order that a subject may count a unit, which is 120 clock hours.

The hour for opening school is merely suggestive. In some communities it may be desirable to begin the school day at 8:30. In this case, allowing

\* Social Science includes History and Civics.



15 minutes for opening exercises, and providing for 50 minutes in each recitation period with 45 minutes for actual class work and a five minute intermission between class periods, the school day will close at 3:30.

It is seen from the above schedule that the first period is from 9-9:50; the second from 9:50-10:40; the third from 10:40-11:30; the fourth from 11:30-12:20; the fifth from 1-1:50; the sixth from 1:50-2:40; the seventh from 2:40-3:30.

## II. 4-A FOUR-TEACHER HIGH SCHOOL

(Average Daily Attendance, 75 to 104)

### A. Suggested Four-Year Curriculum

(Without Home Economics, Agriculture, or Industrial Arts)

The curriculum suggested for a four-teacher high school without home economics, agriculture, or industrial arts is the same as that suggested for the three-teacher high school. The additional teacher is required to care for the additional enrollment; hence, the offering can be no larger in a four- than in a three-teacher high school. A four-teacher high school following the same curriculum may, however, be organized somewhat differently.

<i>First Year</i>			<i>Second Year</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	History II—Modern European .....	5	5
Science I—General .....	7	5	Science II—Biology .....	7	5
	22	20		22	20
<i>Third Year</i>			<i>Fourth Year</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I* .....	5	5	Latin II or French II .....	5	5
Electives (two):			History IV—United States History .....	5	5
Mathematics III—Plane Geometry .....	5	5	Science IV—Physics .....	7	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5			
History III—Ancient and Medieval .....	5	5			
	20 or 22	20		22	20

### B. Suggested Organization

<i>Teacher A</i>		<i>Teacher B</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
English I B .....	5	History I (2 sections) .....	10
English II .....	5	History II .....	5
English III .....	5	History III .....	5
English IV .....	5	History IV .....	5
Latin I or French I .....	5	English I A .....	5
Latin II or French II .....	5		
	30		30

\*Only one foreign language, either Latin or French, may be offered in four-teacher high schools.

<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
Mathematics I (2 sections)	10	Science II .....	7
Mathematics II .....	5	Science III .....	7
Mathematics III .....	5	Science I (2 sections).....	14
Science IV .....	7		
	<hr/> 27		<hr/> 28

High school principals and teachers should assist pupils in every possible way to make wise choice of electives. Electives should be chosen in view of the pupil's career. If the pupil expects to enter college he should elect those subjects that will be needed in meeting college entrance requirements.

Requirements for graduation: English 4; Mathematics 2; History 3; Science 3; Foreign Language 2; Elective 2. Total, 16-units.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D
8:45-9:00 OPENING EXERCISES				
9:05-9:50	English III	History II	Science IV Laboratory, M. W.	Science I A Recitation, M. W. F. Laboratory, T. T.
9:55-10:40	Latin I or French I	History I B	Science IV Laboratory, M. W. Recitation, T. T. F.	Science I A Laboratory, T. T.
10:45-11:30	English IV	History I A	Mathematics I B	Science II Recitation, T. T. F. Laboratory, M. W.
11:35-12:20		History III	Mathematics I A	Science II Laboratory, M. W.
12:20-1:00 NOON RECESS				
1:05-1:50	English II	History IV	Mathematics III	Science I B Recitation, M. T. T. Laboratory, W. F.
1:55-2:40	Latin II or French II	English I A	Mathematics II	Science I B Laboratory, W. F. Science III Laboratory, T. T.
2:45-3:30	English I B			Science III Laboratory, T. T. Recitation, M. W. F.

For suggestions relative to length of recitation periods see daily schedule for three-teacher school.

If a longer lunch period or noon recess is desired, the time for beginning the fifth period can be arranged accordingly.



## III. 4-B FOUR-TEACHER HIGH SCHOOL

(Average Daily Attendance, 75 to 104)

A. Suggested Four-Year Curriculum  
(Including Smith-Hughes Home Economics)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology .....	7	5
Home Economics I .....	10	5	History II—Modern European .....	5	5
or			or		
Science I—General .....	7	5	Home Economics II .....	10	5
	22 or 25	20		22-27	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I* .....	5	5	Latin II or French II .....	5	5
Electives (two):			History IV—United States History .....	5	5
Mathematics III—Plane Geometry .....	5	5	Science IV—Physics .....	7	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5			
History III—Ancient and Medieval .....	5	5			
	20-22	20		22	20

## B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I A .....	5	History I (2 sections) .....	10
English II .....	5	History II .....	5
English III .....	5	History III .....	5
English IV .....	5	History IV .....	5
Latin I and II .....	10	English I B .....	5
or			
French I and II .....	10		
	30		30
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
Mathematics I (2 sections) .....	10	Science II .....	7
Mathematics II .....	5	Home Economics I .....	10
Mathematics III .....	5	Home Economics II .....	10
Science III or IV** .....	7		
Science I .....	7		
	34		27

\*A four-teacher school following this curriculum should offer only one foreign language, either French or Latin.

\*\*Schools offering this curriculum should give Sciences III and IV in alternate years. By giving Science III, for instance, this year to both 10th and 11th grades and Science IV next year to both 10th and 11th grades, both grades may take both Sciences.

Requirements for graduation: English 4; Mathematics 2; Foreign Language 2; Social Science 2; Science 1; Elective 5. Total, 16 units.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D
8:45-9:00 OPENING EXERCISES				
9:05-9:50	English II	English I B	Science III or IV Recitation, M. W. F. Laboratory, T. T	Home Economics I
9:55-10:40		History II	Science III or IV Laboratory, T. T. Science I Laboratory, W. F.	Home Economics I
10:45-11:30	English I A	History IV	Science I Laboratory, W. F. Recitation, M. T. T.	Home Economics II
11:35-12-20	Latin I or French I	History I A	Mathematics I B	Home Economics II
12:20-1:00 NOON RECESS				
1:05-1:50	Latin II or French II	History III	Mathematics I A	Science II Recitation, M. W. F. Laboratory, T. T.
1:55-2:40	English IV		Mathematics III	Science II Laboratory, T. T.
2:45-3:30	English III	History I B	Mathematics II	



## IV. 4-C FOUR-TEACHER HIGH SCHOOL

(Average Daily Attendance, 75 to 104)

## A. Suggested Four-Year Curriculum

(Including Two Years of Smith-Hughes Agriculture)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Electives (two):		
Agriculture I .....	10	5	History II—Modern European .....	5	5
or			Agriculture II .....	10	5
Science I—General .....	7	5	Science II—Biology .....	7	5
	22 or 25	20		22-27	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I* .....	5	5	Latin II or French II .....	5	5
Electives (two):			History IV—United States History .....	5	5
Mathematics III—Plane Geometry .....	5	5	Science IV—Physics .....	7	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5			
History III—Ancient and Medieval .....	5	5			
	20 or 22	20		22	20

## B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I A .....	5	History I (2 sections) .....	10
English II .....	5	History II .....	5
English III .....	5	History III .....	5
English IV .....	5	History IV .....	5
Latin I and II .....	10	English I B .....	5
or			
French I and II .....	10		
	30		30
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
Mathematics I (2 sections) .....	10	Science I .....	7
Mathematics II .....	5	Science II .....	7
Mathematics III .....	5	Agriculture I .....	10
Science III .....	7	Agriculture II .....	10
Science IV .....	7		
	34		34

\*A four-teacher school following this curriculum should offer only one foreign language, either French or Latin.

Requirements for graduation: English 4; Social Science 2; Mathematics 2; Foreign Language 2; Science 1; Elective 5. Total, 16 units.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D
8:45-9:00 OPENING EXERCISES				
9:05-9:50	English II	History IV	Science III Recitation, M. W. F. Laboratory, T. T.	Agriculture I
9:55-10:40		History II	Science III Laboratory, T. T. Science IV Laboratory, W. F.	Agriculture I
10:45-11:30	English I A	English I B	Science IV Laboratory, W. F. Recitation, M. T. T.	Agriculture II
11:35-12:20	Latin I or French I	History I A	Mathematics I B	Agriculture II
12:20-1:00 NOON RECESS				
1:05-1:50	Latin II or French II	History III	Mathematics II	Science I Recitation, M. W. F. Laboratory, T. T.
1:55-2:40	English IV		Mathematics III	Science I Laboratory, T. T. Science II Laboratory, M. W.
2:45-3:30	English III	History I B	Mathematics I A	Science II Laboratory, M. W. Recitation, T. T. F.



## V. 4-D FOUR-TEACHER HIGH SCHOOL

(Average Daily Attendance, 75 to 104)

## A. Suggested Four-Year Curriculum

(Including Two Years of Smith-Hughes Home Economics and Two Years of Smith-Hughes Agriculture)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology .....	7	5
Home Economics I .....	10	5	Home Economics II .....	10	5
or			or		
Agriculture I .....	10	5	Agriculture II .....	10	5
	25	20		27	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Mathematics III—Plane Geometry .....	5	5	Latin II or French II .....	5	5
or			History IV—United States History .....	5	5
History III—Ancient and Medieval .....	5	5	Science IV—Physics .....	7	5
Latin I or French I* .....	5	5			
History II—Modern European .....	5	5			
	20	20		22	20

## B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I B .....	5	History I (2 sections) .....	10
English II .....	5	History II .....	5
English III .....	5	History III .....	5
English IV .....	5	History IV .....	5
Latin I and II .....	10	English I A .....	5
or			
French I and II .....	10		
	30		30
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
Mathematics I (2 sections) .....	10	Science II .....	7
Mathematics II .....	5	Science IV .....	7
Mathematics III .....	5	Home Economics I .....	10
Agriculture I .....	10	Home Economics II .....	10
or			
Agriculture II .....	10		
	30		34

\*A four-teacher school following this curriculum should offer only one foreign language, either Latin or French.

Requirements for graduation: English 4; Mathematics 2; Science 2; Social Science 2; Foreign Language 2; Elective 4. Total, 16 units.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D
8:45-9:00 OPENING EXERCISES				
9:05-9:50	English III	History IV	Agriculture I or II	Home Economics II
9:55-10:40	English IV	History III	Agriculture I or II	Home Economics II
10:45-11:30	English I B		Mathematics III	Home Economics I
11:35-12:20	Latin I or French I	History I A	Mathematics II	Home Economics I
12:20-1:00 NOON RECESS				
1:05-1:50	Latin II or French II	History I B	Mathematics I A	Science II Recitation, W. M. F. Laboratory, T. T.
1:55-2:40		English I A		Science II Laboratory, T. T. Science IV Laboratory, M. W.
2:45-3:30	English II	History II	Mathematics I B	Science IV Laboratory, M. W. Recitation, T. T. F.

## VI. 5-A FIVE-TEACHER HIGH SCHOOL

(Average Daily Attendance, 105 to 134)

### A. Suggested Four-Year Curriculum

(Without Home Economics, Agriculture, or Industrial Arts)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology.....	7	5
Science I—General.....	7	5	History II—Modern European .....	5	5
or			or		
Latin I .....	5	5	Latin II .....	5	5
20 or 22		20	22		20



<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Electives (three):			United States History		
Mathematics III—			IV .....	5	5
Plane Geometry .....	5	5	Electives (two):		
Science III—Physical			Science IV—Physics ..	7	5
Geography ½,			Latin IV .....	5	5
Industrial and Com-			French II .....	5	5
mercial Geography ½	7	5			
History III—Ancient					
and Medieval .....	5	5			
Latin III .....	5	5			
French I* .....	5	5			
<hr/>			<hr/>		
20 or 22		20	20 or 22		20

**B. Suggested Organization**

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English II .....	5	Latin I .....	5
English III .....	5	Latin II .....	5
English IV .....	5	Latin III .....	5
French I .....	5	Latin IV .....	5
French II .....	5	English I (2 sections) .....	10
<hr/>		<hr/>	
25		30	
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
History I (2 sections) .....	10	Mathematics I (2 sections)	10
History II .....	5	Mathematics II .....	5
History III .....	5	Mathematics III .....	5
History IV .....	5		
<hr/>		<hr/>	
25		**20	
<i>Teacher E</i>	<i>Periods Per Week</i>		
Science I .....	7		
Science II .....	7		
Science III .....	7		
Science IV .....	7		
<hr/>			

28

Principals and teachers should assist pupils in choosing electives. It is increasingly necessary in this curriculum since the range of electives is wider than in smaller schools.

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 1; Foreign Language 2; Elective 5. Total, 16 units.

\*A student not taking Latin in the first and second years must elect French in the third and fourth years.

\*\*Although the load here appears light, it is assumed that this teacher is the principal whose additional duties are listed on page 49. See also third paragraph on page 48.

## C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E
8:45-9:00 OPENING EXERCISES					
9:05-9:50	English II	Latin IV		Mathematics III	Science I Recitation, M.W.F. Laboratory, T. T.
9:55-10:40	English III	Latin II	History IV		Science I Laboratory, T. T.
10:45-11:30		Latin I	History III		Science II Recitation, M.W.F. Laboratory, T. T.
11:35-12:20	English IV	Latin III	History I A	Mathematics I B	Science II Laboratory, T. T.
12:20-1:00 NOON RECESS					
1:05-1:50	French II	English I A	History II		Science III Recitation, M.W.F. Laboratory, T. T.
1:55-2:40		English I B		Mathematics II	Science III Laboratory, T. T. Science IV Laboratory, M. W.
2:45-3:30	French I		History I B	Mathematics I A	Science IV Laboratory, M. W. Recitation, T.T.F.

## VII. 5-B FIVE-TEACHER HIGH SCHOOL

(Average Daily Attendance, 104 to 134)

## A. Suggested Four-Year Curriculum

(Including Smith-Hughes Home Economics)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra ..	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology....	7	5
Science I—General.....	7	5	History II—Modern European .....	5	5
or			or		
Home Economics I.....	10	5	Home Economics II....	10	5
22 or 25		20	22 or 27		20



<i>Third Year</i>			<i>Fourth Year</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I* ..	5	5	United States History		
Electives (two):			IV .....	5	5
Mathematics III—			Science IV—Physics ..	7	5
Plane Geometry .....	5	5	Latin II or French II*	5	5
Science III—Physical					
Geography $\frac{1}{2}$ ,					
Industrial and Com-					
mmercial Geography $\frac{1}{2}$	7	5			
History III—Ancient					
and Medieval .....	5	5			
<hr/>			<hr/>		
	20 or 22	20		22	20

**B. Suggested Organization**

<i>Teacher A</i>		<i>Teacher B</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
English I (2 sections) .....	10	Science I .....	7
English II .....	5	Science II .....	7
English IV .....	5	Science III .....	7
Latin I or French I .....	5	Science IV .....	7
Latin II or French II .....	5		
<hr/>		<hr/>	
	30		28

<i>Teacher C</i>		<i>Teacher D</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
History I (2 sections) .....	10	Mathematics I (2 sections)	10
History II .....	5	Mathematics II .....	5
History III .....	5	Mathematics III .....	5
History IV .....	5		
English III .....	5		
<hr/>		<hr/>	
	30		**20

<i>Teacher E</i>	
	<i>Periods Per Week</i>
Home Economics I (2	
sections) .....	20
Home Economics II .....	10
<hr/>	
	30

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 2; Foreign Language 2; Elective 4. Total, 16 units.

\*A five-teacher school following this curriculum should offer only one foreign language, either Latin or French.

\*\*See footnote page 65.

C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E
8:45-9:00 OPENING EXERCISES					
9:05-9:50	English IV	Science I Recitation, M. W. F. Laboratory, T. T.		Mathematics III	Home Economics II
9:55-10:40	Latin I or French I	Science I Laboratory, T. T.	History IV		Home Economics II
10:45-11:30	English I A	Science II Recitation, M. W. F. Laboratory, T. T.	History III		Home Economics I B
11:35-12:20	Latin II or French II	Science II Laboratory, T. T.	English III	Mathematics I A	Home Economics I B
12:20-1:00 NOON RECESS					
1:05-1:50		Science III Recitation, M. W. F. Laboratory, T. T.	History II	Mathematics I B	Home Economics I A
1:55-2:40	English II	Science III Laboratory, T. T. Science IV Laboratory, M.W.	History I B		Home Economics I A
2:45-3:30	English I B	Science IV Laboratory, M.W. Recitation T. T. F.	History I A	Mathematics II	

VIII. 5-C FIVE-TEACHER HIGH SCHOOL

(Average Daily Attendance, 105 to 134)

A. Suggested Four-Year Curriculum  
(Including Four Years of Smith-Hughes Agriculture)

First Year	Periods	Credits	Second Year	Periods	Credits
English I .....	5	5	English II .....	5	5
Mathematics I—Arith- metic and Algebra .....	5	5	Mathematics II—Alge- bra .....	5	5
History I—Communi- ty Civics .....	5	5	Science II—Biology....	7	5
Science I—General.....	7	5	History II—Modern European .....	5	5
or			or		
Agriculture I .....	10	5	Agriculture II .....	10	5
		<hr/>			<hr/>
		22 or 25      20			25 or 27      20



<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Agriculture III or .....	10	5	United States History		
Latin I or French I* ..	5	5	IV .....	5	5
Electives (two):			Science IV—Physics ..	7	5
Mathematics III—			Latin II or French II* ..	5	5
Plane Geometry .....	5	5	or		
Science III—Physical			Agriculture IV .....	10	5
Geography $\frac{1}{2}$ ,					
Industrial and Com-					
mmercial Geography $\frac{1}{2}$ ..	7	5			
History III—Ancient					
and Medieval .....	5	5			
<hr/>			<hr/>		
	20-27	20		22 or 27	20

**B. Suggested Organization**

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I (2 sections) .....	10	Science I .....	7
English II .....	5	Science II .....	7
English IV .....	5	Science III .....	7
Latin I or French I .....	5	Science IV .....	7
Latin II or French II .....	5		
<hr/>		<hr/>	
	30		28

<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
History I (2 sections) .....	10	Mathematics I (2 sections) ..	10
History II .....	5	Mathematics II .....	5
History III .....	5	Mathematics III .....	5
History IV .....	5		
English III .....	5		
<hr/>		<hr/>	
	30		**20

<i>Teacher E</i>	<i>Periods Per Week</i>
Agriculture I and II .....	10
Agriculture III and IV .....	10
Shop and Field Projects .....	10
<hr/>	
	30

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 2; Foreign Language 2 or Agriculture 4; Elective 4. Total, 16 units.

NOTE: Foreign Language is not required of students who complete 4 units of Agriculture.

\*A five-teacher school following this curriculum should offer only one foreign language, either Latin or French.

\*\*See footnote page 65.

## C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E
8:45-9:00 OPENING EXERCISES					
9:00-9:50	English I B	Science III Recitation, M. W. F. Laboratory, T. T.			Agriculture I and II
9:55-10:40	English IV	Science III Laboratory, T. T.	History II	Mathematics I B	Agriculture I and II
10:45-11:30	Latin I or French I	Science II Recitation M. W. F. Laboratory, T. T.	History I B	Mathematics I A	Agriculture III and IV
11:35-12:20	Latin II or French II	Science II Laboratory, T. T.	History I A		Agriculture III and IV
12:20-1:00 NOON RECESS					
1:05-1:50	English II	Science I Recitation M. W. F. Laboratory, T. T.	History IV	Mathematics III	
1:55-2:40		Science I Laboratory, T. T. Science IV Laboratory, M.W.	History III	Mathematics II	
2:45-3:30	English I A	Science IV Laboratory, M.W. Recitation, T. T. F.	English III		

## IX. 5-D FIVE-TEACHER HIGH SCHOOL

(Average Daily Attendance, 105 to 134)

## A. Suggested Four-Year Curriculum

(Including Smith-Hughes Home Economics and Smith-Hughes Agriculture)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra ..	5	5	Mathematics II—Algebra .....	5	5
History II—Modern European .....	5	5	Science II—Biology....	7	5
Home Economics I....	10	5	Home Economics II....	10	5
or			or		
Agriculture I .....	10	5	Agriculture II .....	10	5
	25	20		25	20



<i>Third Year</i>			<i>Fourth Year</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Latin I or French I* ..	5	5	United States History		
or			IV .....	5	5
Agriculture III .....	10	5	Science IV—Physics ..	7	5
Electives (two):			Latin II or French II* ..	5	5
Mathematics III—			or		
Plane Geometry .....	5	5	Agriculture IV .....	10	5
Science III—Physical					
Geography ½.					
Industrial and Com-					
mercial Geography ½ ..	7	5			
History III—Ancient					
and Medieval .....	5	5			
<hr/>			<hr/>		
20 or 27		20	22 or 27		20

**B. Suggested Organization**

<i>Teacher A</i>		<i>Teacher B</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
English I A .....	5	History II (2 sections) .....	10
English II .....	5	History III .....	5
English III .....	5	History IV .....	5
English IV .....	5	English I B .....	5
Latin I or French I .....	5		
Latin II or French II .....	5		
<hr/>		<hr/>	
30		25	
<i>Teacher C</i>		<i>Teacher D</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
Mathematics I (2 sections) ..	10	Agriculture I and II .....	10
Mathematics II (2 sections) ..	10	Agriculture III and IV .....	10
Mathematics III .....	5	Shop and Field Projects .....	10
Science III or IV** .....	7		
<hr/>		<hr/>	
32		30	
<i>Teacher E</i>		<i>Periods Per Week</i>	
Home Economics I .....		10	
Home Economics II .....		10	
Science II .....		7	
<hr/>		<hr/>	

27

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 2; Foreign Language 2; Elective 4. Total, 16 units.

NOTE: Foreign Language is not required of students who complete 4 units of Agriculture.

\*A five-teacher high school following this curriculum should offer only one foreign language, either Latin or French.

\*\*See footnote page 59.

## C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E
8:45-9:00 OPENING EXERCISES					
9:05-9:50	English III	History IV	Mathematics II A	Agriculture I and II	Home Economics I
9:55-10:40	English IV		Mathematics III	Agriculture I and II	Home Economics I
10:45-11:30	Latin I or French I	English I B	Mathematics I A	Agriculture III and IV	Science II Recitation, M. W. F. Laboratory, T. T.
11:35-12:20	Latin II or French II		Mathematics I B	Agriculture III and IV	Science II Laboratory, T. T.
12:20-1:00 NOON RECESS					
1:05-1:50	English I A	History III	Mathematics II B		Home Economics II
1:55-2:40		History II A	Science III or IV Laboratory M. W.		Home Economics II
2:45-3:30	English II	History II B	Science III or IV Laboratory M. W. Recitation T. T. F.		

## X. 6-A SIX-TEACHER HIGH SCHOOL

(Average Daily Attendance, 135 to 164)

## A. Suggested Four-Year Curriculum

(Without Home Economics, Agriculture, or Industrial Arts)

First Year	Periods	Credits	Second Year	Periods	Credits
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology.....	7	5
Science I—General.....	7	5	History II—Modern European .....	5	5
or			or		
Latin I .....	5	5	Latin II .....	5	5
20 or 22		20	22		20



<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Electives (three):			History IV—United		
Mathematics III—			States .....	5	5
Plane Geometry .....	5	5	Electives (two):		
Science III—Physical			Mathematics IV—Solid		
Geography $\frac{1}{2}$ , In-			Geometry and Ad-		
dustrial and Com-			vanced Algebra.....	5	5
mmercial Geography			Science IV—Physics ..	7	5
$\frac{1}{2}$ or .....	7	5	Latin IV .....	5	5
Science V—Chemistry	7	5	French II .....	5	5
History III—Ancient					
and Modern .....	5	5			
Latin III .....	5	5			
French I .....	5	5			
20 or 22		20	20 or 22		20

**B. Suggested Organization**

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English I (2 sections).....	10	English II .....	5
English III .....	5	Latin I .....	5
English IV .....	5	Latin II .....	5
French I .....	5	Latin III .....	5
French II .....	5	Latin IV .....	5
30		25	
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
History I (2 sections).....	10	Mathematics I B.....	5
History II .....	5	Mathematics II (2 sections)	10
History III .....	5	Mathematics III .....	5
History IV .....	5	Mathematics IV .....	5
25		25	
<i>Teacher E</i>	<i>Periods Per Week</i>	<i>Teacher F</i>	<i>Periods Per Week</i>
Science I (2 sections).....	14	Science II (2 sections).....	14
Science III .....	7	Mathematics I A .....	5
Science IV .....	7	Science V .....	7
28		26	

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 2; Foreign Language 2; Elective 4. Total, 16 units.

## C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E	TEACHER F
8:45-9:00 OPENING EXERCISES						
9:05-9:50	English I A	Latin II		Mathematics III	Science IV Recitation T. T. F. Laboratory, M. W.	Science II A Recitation, M. W. F. Laboratory, T. T.
9:55-10:40		Latin I	History III	Mathematics II B	Science IV Laboratory, M. W.	Science II A Laboratory T. T.
10:45-11:30	English I B	Latin III		Mathematics IV	Science I A Recitation, T. T. F. Laboratory, M. W.	Science II B Recitation, M. W. F. Laboratory, T. T.
11:35-12:20	French I	Latin IV	History I B	Mathematics II A	Science I A Laboratory, M. W.	Science II B Laboratory T. T.
12:20-1:00 NOON RECESS						
1:05-1:50	English III	English II	History IV		Science I B Recitation, M. W. F. Laboratory, T. T.	Mathematics I A
1:55-2:40	French II		History I A		Science I B Laboratory, T. T. *Science III Laboratory, M. W.	Science V Laboratory, M. W.
2:45-3:30	English IV		History II	Mathematics I B	Science III Laboratory, M. W. Recitation, T. T. F.	Science V Laboratory, M. W. Recitation. T. T. F.

\*The experiments in each of the sciences appearing in this schedule, except those in Science III, may be performed without a conflict, as indicated below, in a single laboratory room. If only one laboratory is available, it will be necessary to care for Science III laboratory work in one of the classrooms. The nature of this course is such that this can be done satisfactorily.



## SCIENCE LABORATORY SCHEDULE

PERIODS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
9:05-9:50	IV	II A	IV	II A
9:55-10:40	IV	II A	IV	II A
10:45-11:30	I A	II B	I A	II B
11:35-12:20	I A	II B	I A	II B
12:20-1:00	NOON RECESS			
1:05-1:50		IB		IB
1:55-2:40	V	IB	V	IB
2:45-3:30	V		V	

## XI. 6-B SIX-TEACHER HIGH SCHOOL

(Average Daily Attendance, 135 to 164)

## A. Suggested Four-Year Curriculum

(With Smith-Hughes Home Economics and Smith-Hughes Agriculture)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology .....	7	5
Elective (one):			Elective (one):		
Science I—General .....	7	5	History II—Modern European .....	5	5
Home Economics I .....	10	5	Home Economics II .....	10	5
Agriculture I .....	10	5	Agriculture II .....	10	5
	22 or 25	20		22 or 27	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Electives (two):			History IV—United State History .....	5	5
Mathematics III—Plane Geometry .....	5	5	Science IV—Physics .....	7	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ or .....	7	5	Elective (one):		
Science V—Chemistry .....	7	5	Latin II or French II* .....	5	5
History III—Ancient and Medieval .....	5	5	Agriculture IV .....	10	5
Elective (one):					
Latin I or French I* .....	5	5			
Agriculture III .....	10	5			
	22-27	20		22-27	20

**B. Suggested Organization**

<i>Teacher A</i>		<i>Teacher B</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
English I (2 sections).....	10	History I (2 sections).....	10
English III .....	5	History II .....	5
English IV .....	5	History III .....	5
Latin I or French I .....	5	History IV .....	5
Latin II or French II.....	5	English II .....	5
30		30	
<i>Teacher C</i>		<i>Teacher D</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
Mathematics I (2 sections) .....	10	Science I .....	7
Mathematics II .....	5	Science II .....	7
Mathematics III .....	5	Science IV .....	7
Science III .....	7	Science V .....	7
28		28	

\*In a six-teacher high school following this curriculum only one foreign language may be offered.

<i>Teacher E</i>		<i>Teacher F</i>	
	<i>Periods Per Week</i>		<i>Periods Per Week</i>
Home Economics I (2 sections) .....	20	Agriculture I and II.....	10
Home Economics II.....	10	Agriculture III and IV.....	10
30		Shop and Field Projects....	10
30		30	

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 2; Foreign Language 2; Elective 4. Total, 16 units.

NOTE: Foreign Language is not required of students who complete 4 units of Agriculture.

**C. Suggested Daily Schedule**

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E	TEACHER F
8:45-9:00	OPENING EXERCISES					
9:05-9:50	English III	History II	Mathematics I A	Science I Recitation, M. W. F. Laboratory, T. T	Home Economics II	Agriculture I and II
9:55-10:40	English IV	History I A	Mathematics III	Science I Laboratory, T. T.	Home Economics II	Agriculture I and II
10:45-11:30	Latin I or French I		Mathematics I B	Science II Recitation, M. W. F. Laboratory, T. T.	Home Economics I A	Agriculture III and IV
11:35-12:20	Latin II or French II	History I B		Science II Laboratory, T. T.	Home Economics I A	Agriculture III and IV



C. Suggested Daily Schedule—*Continued*

12:20-1:00		NOON RECESS				
1:05-1:50	English I A	History III	Mathematics II	Science IV Recitation, M. W. F. Laboratory, T. T.	Home Economics I B	
1:55-2:40		English II	Science III Recitation, M. W. F. Laboratory, T. T.	Science IV Laboratory, T. T. Science V Laboratory, M. W.	Home Economics I B	
2:45-3:30	English I B	History IV	Science III Laboratory, T. T.	Science V Laboratory, M. W. Recitation, T. T. F.		

## XII. 6-C SIX-TEACHER HIGH SCHOOL

(Average Daily Attendance, 135 to 164)

A. Suggested Four-Year Curriculum  
(With Commercial Education)

<i>First Year</i>			<i>Second Year</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	History II—Modern European .....	5	5
Science I—General .....	7	5	Science II—Biology .....	7	5
	22	20		22	20
<i>Third Year General</i>			<i>Third Year Commercial</i>		
	<i>Periods</i>	<i>Credits</i>		<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English III .....	5	5
Latin I or French I .....	5	5	Business Arithmetic ½, Industrial and Commercial Geography ½ .....	5	5
Mathematics III—Plane Geometry .....	5	5	Typewriting I .....	10	5
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5	Stenography I .....	5	5
History III—Ancient and Medieval .....	5	5			
	20 or 22	20		25	20

<i>Fourth Year General</i>		<i>Periods</i>	<i>Credits</i>
English IV .....	5	5	
Latin II or French II .....	5	5	
History IV—United States History .....	5	5	
Science IV—Physics .....	7	5	
		<hr/>	
		22	20

<i>Fourth Year Commercial</i>		<i>Periods</i>	<i>Credits</i>
English IV .....	5	5	
History IV—United States History .....	5	5	
Stenography II .....	5	5	
Typewriting II .....	5	2½	
Office Practice .....	5	2½	
		<hr/>	
		25	20

### B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>
English I A .....	5
English II .....	5
English III .....	5
English IV .....	5
Latin I or French I* .....	5
Latin II or French II .....	5
	<hr/>
	30

<i>Teacher B</i>	<i>Periods Per Week</i>
History I (2 sections) .....	10
History II .....	5
History III .....	5
History IV .....	5
English I B .....	5
<hr/>	
	30

\*In a school following this curriculum only one foreign language may be taught, either Latin or French.

<i>Teacher C</i>	<i>Periods Per Week</i>
Mathematics I (2 sections)	10
Mathematics II (2 sections)	10
Business Arithmetic -----	5
	<hr/>
	25

<i>Teacher D</i>	<i>Periods Per Week</i>
Science I (2 sections) _____	14
Mathematics III _____	5
Science IV _____	7
	<hr/>
	26

<i>Teacher E</i>	<i>Periods Per Week</i>
Science II (2 sections).....	14
Science III -----	7
<hr/>	
**21	

<i>Teacher F*</i>	<i>Periods Per Week</i>
Typewriting I -----	10
Stenography I -----	5
Stenography II -----	5
Typewriting II -----	5
Office Practice -----	5
	<hr/>
	35

Requirements for graduation: English 4; Mathematics 2; Social Science 3; Science 3; Elective 4. Total, 16 units.

\*Teacher F must be a well-trained teacher of commercial education.

\*\*See footnote page 65.



**C. Suggested Daily Schedule**

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E	TEACHER F
8:45-9:00 OPENING EXERCISES						
9:05-9:50	English IV	History I B		Science I A Recitation, T. T. F. Laboratory, M. W.	Science II A Recitation, M. W. F. Laboratory, T. T.	Typewriting I
9:55-10:40	Latin II or French II	History III	Mathematics II B	Science I A Laboratory, M. W.	Science II A Laboratory, T. T.	Typewriting I
10:45-11:30	Latin I or French I	History I A	Mathematics I B	Science IV Recitation, T. T. F. Laboratory, M. W.	Science II B Recitation, M. W. F. Laboratory, T. T.	Office Practice (11th Grade)
11:35-12:20	English III	English I B	Mathematics II A	Science IV Laboratory, M. W.	Science II B Laboratory, T. T.	Typewriting II
12:20-1:00 NOON RECESS						
1:05-1:50	English II		Business Arithmetic	Science I B Recitation, T. T. F. Laboratory, M. W.	Science III Recitation, M. W. F. Laboratory, T. T.	
1:55-2:40	English I A	History II		Science I B Laboratory, M. W.	Science III Laboratory, T. T.	Stenography II
2:45-3:30		History IV	Mathematics I A	Mathematics III		Stenography I

**XIII. 6-D SIX-TEACHER HIGH SCHOOL**

(Average Daily Attendance, 135 to 164)

**A. Suggested Four-Year Curriculum  
(Including Smith-Hughes Home Economics)**

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra ..	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology....	7	5
Elective (one):			Elective (one):		
Science I—General.....	7	5	History II—Modern European .....	5	5
Home Economics I.....	10	5	Home Economics II....	10	5
Latin I .....	5	5	Latin II .....	5	5
	20-25	20		22-27	20

<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Electives (three):			United States History		
Mathematics III—			IV .....	5	5
Plane Geometry .....	5	5	Electives (two):		
Science III—Physical			Science IV—Physics ..	7	5
Geography ½,			Latin IV .....	5	5
Industrial and Com-			French II .....	5	5
mercial Geography ½	7	5			
History III—Ancient					
and Medieval .....	5	5			
Latin III .....	5	5			
French I* .....	5	5			
<hr/>			<hr/>		
20 or 22		20	20 or 22		20

**B. Suggested Organization**

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English II .....	5	Latin I .....	5
English III .....	5	Latin II .....	5
English IV .....	5	Latin III .....	5
French I .....	5	Latin IV .....	5
French II .....	5	English I (2 sections).....	10
	<hr/>		<hr/>
	25		30
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
History I (2 sections).....	10	Mathematics I (2 sections)	10
History II .....	5	Mathematics II .....	5
History III .....	5	Mathematics III .....	5
History IV .....	5		
	<hr/>		<hr/>
	25		**20
<i>Teacher E</i>	<i>Periods Per Week</i>	<i>Teacher F</i>	<i>Periods Per Week</i>
Science I .....	7	Home Economics I (2	
Science II .....	7	sections) .....	20
Science III .....	7	Home Economics II.....	10
Science IV .....	7		
	<hr/>		<hr/>
	28		30

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 1; Foreign Language 2; Elective 5. Total, 16 units.

\*A student not taking Latin in the first and second years must elect French in the third and fourth years.

\*\*See footnote page 65.



## C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E	TEACHER F
8:45-9:00 OPENING EXERCISES						
9:05-9:50	English II	Latin IV		Mathematics III	Science I Recitation, M. W. F. Laboratory, T. T.	Home Economics I A
9:55-10:40	English III	Latin II	History IV		Science I Laboratory, T. T.	Home Economics I A
10:45-11:30		Latin I	History III		Science II Recitation, M. W. F. Laboratory, T. T.	Home Economics, I B
11:35-12:20	English IV	Latin III	History I A	Mathematics I B	Science II Laboratory, T. T.	Home Economics, I B
12:20-1:00 NOON RECESS						
1:05-1:50	French II	English I A	History II		Science III Recitation, M. W. F. Laboratory, T. T.	Home Economics II
1:55-2:40		English I B		Mathematics I A	Science III Laboratory, T. T. Science IV Laboratory, M. W.	Home Economics II
2:45-3:30	French I		History I B	Mathematics II	Science IV Laboratory, M. W. Recitation, T. T. F.	

## XIV. 6-E SIX-TEACHER HIGH SCHOOL

(Average Daily Attendance, 135 to 164)

A. Suggested Four-Year Curriculum  
(Including Four Years Smith-Hughes Agriculture)

<i>First Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Second Year</i>	<i>Periods</i>	<i>Credits</i>
English I .....	5	5	English II .....	5	5
Mathematics I—Arithmetic and Algebra .....	5	5	Mathematics II—Algebra .....	5	5
History I—Community Civics .....	5	5	Science II—Biology....	7	5
Elective (one):			Elective (one):		
Science I—General ....	7	5	History II—Modern European .....	5	5
Agriculture I .....	10	5	Agriculture II .....	10	5
Latin I .....	5	5	Latin II .....	5	5
	20-27	20		22-27	20
<i>Third Year</i>	<i>Periods</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Periods</i>	<i>Credits</i>
English III .....	5	5	English IV .....	5	5
Electives (three):			United States History IV .....	5	5
Mathematics III—Plane Geometry .....	5	5	Electives (two):		
Science III—Physical Geography ½, Industrial and Commercial Geography ½ .....	7	5	Science IV—Physics ..	7	5
or			Latin IV .....	5	5
History III—Ancient and Medieval .....	5	5	French II .....	5	5
French I* .....	5	5	Agriculture IV .....	10	5
Agriculture III .....	10	5			
	20-27	20		20-27	20

## B. Suggested Organization

<i>Teacher A</i>	<i>Periods Per Week</i>	<i>Teacher B</i>	<i>Periods Per Week</i>
English II .....	5	Latin I .....	5
English III .....	5	Latin II .....	5
English IV .....	5	Latin III .....	5
French I .....	5	Latin IV .....	5
French II .....	5	English I (2 sections) .....	10
	25		30
<i>Teacher C</i>	<i>Periods Per Week</i>	<i>Teacher D</i>	<i>Periods Per Week</i>
History I (2 sections) .....	10	Mathematics I (2 sections) .....	10
History II .....	5	Mathematics II .....	5
History IV .....	5	Mathematics III .....	5
History III .....	5		
	25		**20

\*A student not taking Latin in the first and second years must elect French in the third and fourth years, unless he takes the four-year Agriculture course.

\*\*See footnote page 65.



<i>Teacher E</i>	<i>Periods Per Week</i>	<i>Teacher F</i>	<i>Periods Per Week</i>
Science I .....	7	Agriculture I and II .....	10
Science II .....	7	Agriculture II and III .....	10
Science III .....	7	Shop and Field Projects .....	10
Science IV .....	7		
	28		30

Requirements for graduation: English 4; Mathematics 2; Social Science 2; Science 1; Foreign Language 2; Elective 5. Total, 16 units.

NOTE: Foreign Language is not required of students who complete 4 units of Agriculture.

### C. Suggested Daily Schedule

PERIODS	TEACHER A	TEACHER B	TEACHER C	TEACHER D	TEACHER E	TEACHER F
8:45-9:00	OPENING EXERCISES					
9:05-9:50	English IV	Latin I	History II	Mathematics III	Science I Recitation, M. W. F. Laboratory, T. T.	Agriculture I and II
9:55-10:40	English III	Latin II	History IV		Science II Recitation, T. T.	Agriculture I and II
10:45-11:30		Latin IV			Science II Recitation, M. W. F. Laboratory, T. T.	Agriculture III and IV
11:35-12:20		Latin III	History I A	Mathematics I B	Science II Laboratory, T. T.	Agriculture III and IV
12:20-1:00	NOON RECESS					
1:05-1:50	English II	English I A			Science III Recitation, M. W. F. Laboratory, T. T.	
1:55-2:40	French II	English I B	History III	Mathematics II	Science III Laboratory, T. T. Science IV Laboratory, M. W.	
2:45-3:30	French I		History I B	Mathematics I A	Science IV Laboratory, M. W. Recitation, T. T. F.	

## INDEX

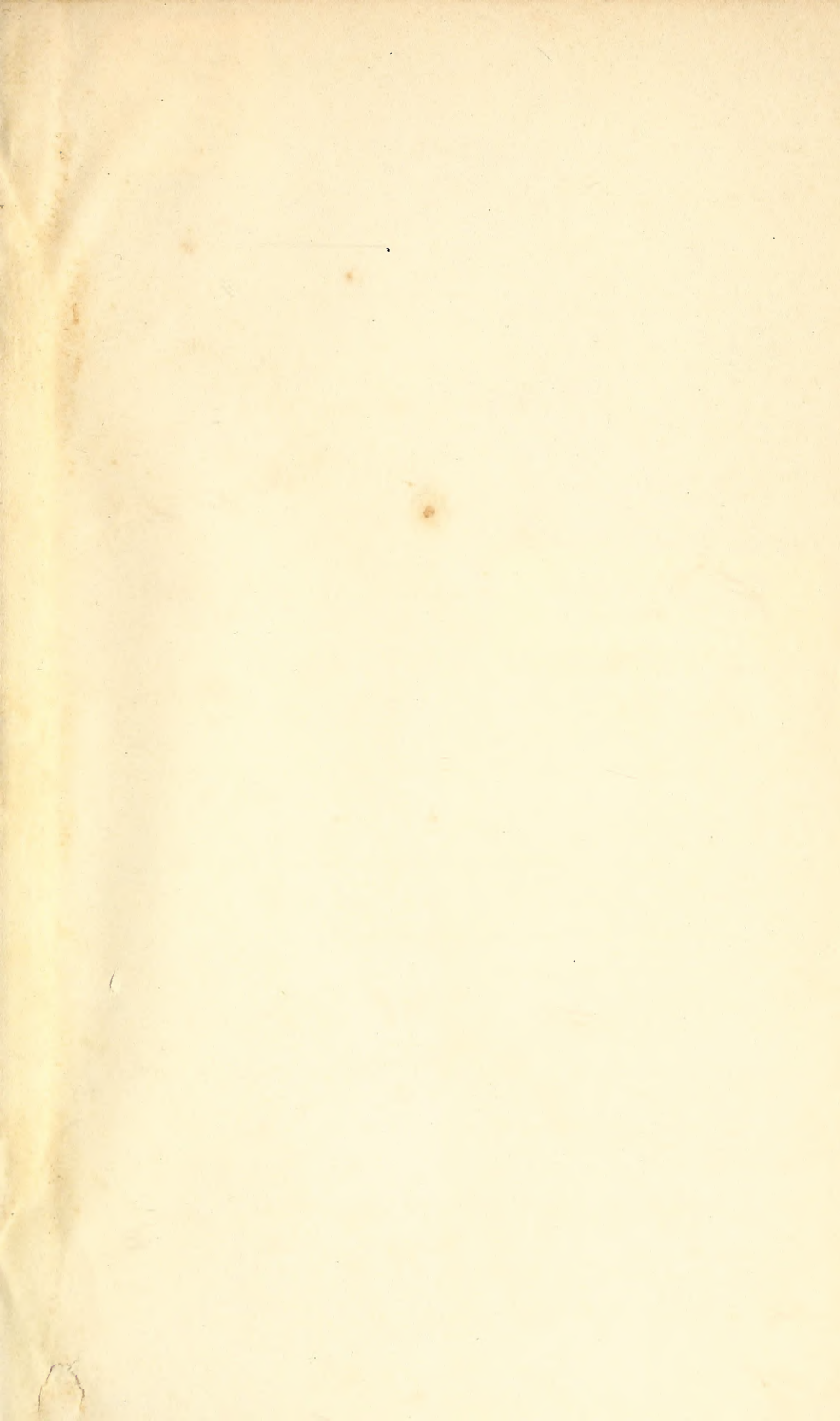
- Accredited high school requirements, 7.
- Achievement tests, 36.
- Administrative duties of principal, 49.
- Admission of pupils, 53.
- Agriculture course of study, 61, 63, 68, 70, 75; how to schedule, 15; credit for, 54.
- Aid from State for library, 11.
- Aims and Purposes of secondary education, 5.
- Alternation of subjects, 59.
- Apparatus, Science laboratory, 16; playground, 44.
- Arithmetic, credit for, 53.
- Art and interior decoration, 41, 47.
- Assembly, 39.
- Association of Colleges and Secondary Schools of Southern States, requirements for membership, 32.
- Athletics, provision for, 42; references, 41, 47.
- Attendance, how to improve, 51; teacher allotment, 7.
- Bibliography, professional, 42.
- Biology laboratory apparatus, 17.
- Books required for accredited rating, 11.
- Bookkeeping, 77, 23.
- Bulletin board, 10, 12.
- Buildings, standards for, 29; references, 44; how to relieve congestion, 52; inspection of, 51.
- Business training, 77.
- Cabinets, principal's filing, 28; laboratory apparatus, 15.
- Cardinal Principles of Secondary Education, 5, 42.
- Certification of teachers, 7; of principals, 8.
- Chemistry laboratory apparatus, 22.
- Classes, size of, 53; combination or alternation of, 59; homogeneous grouping, 36.
- Classification of high schools, 29; of pupils, 53, 36.
- Classrooms for particular subjects, 52.
- College entrance examination, 31.
- College entrance requirements, 31.
- Commercial Course, 77, 23; periodicals, 47.
- Course of Study, 9.
- Credit, for arithmetic, 53; for extra-curricular activities, 38; for summer work, 32.
- Curriculum, how to select, 52; when to modify, 48; references, 43.
- Curtains, stage, 25.
- Daily schedule, how to make, 54.
- Day, length of school, 8; special days observance, 39.
- Debate, 41, 43.
- Definition of an accredited high school, 7; of a unit, 8.
- Desks, dimensions of laboratory desks, 15; dealers, 24.
- Discipline, 51.
- Dramatics, 41.
- Duties of principal, 49.
- Elective subjects, general statement, 54; plane geometry, 19.
- Employment of teachers, 52.
- English teachers' professional books and periodicals, 45.



- Entrance requirements, high school, 53; college, 31; college entrance examinations, 31.
- Equipment and supplies, 9, 24.
- Examination, college entrance, 31; high school senior, 32.
- Extra-curricular activities, suggested organization, 38; credit for, 38.
  
- Filing cabinet for records, 28.
- First Aid cabinets, 25.
- First day of school, duties of principal before, 49, 50.
- Foreign language teachers' professional books and periodicals, 46.
- French teachers' professional books and periodicals, 46.
  
- Gas, 16.
- Geography laboratory apparatus, 18.
- Geometry, when to elect, 54.
- General Science laboratory apparatus, 16.
- Grading or marking, 34.
- Graduation requirements, 8.
- Grounds, beautification of, 26, 52.
- Guidance, 43, 54.
  
- Health, 5.
- History teachers' professional books and periodicals, 46; maps, 13.
- Holidays, 8.
- Home rooms, 38.
- Hour period plan, 53, 8.
- How to Study, 14, 43.
- Hygiene, 47.
  
- Instruction in non-standard schools, 52, 53.
- Intelligence tests, 37.
- Irregulars, daily schedule for, 54.
  
- Janitor, duties of, 51; references, 44.
- Junior high school, organization, 9; references, 43.
  
- Laboratory, science, the room, 14; apparatus, 15; if congested, 52.
- Languages, which to adopt, 52; professional books and periodicals, 46.
- Latin, teachers' professional books and periodicals, 46; number years to offer, 56, 64.
- Legal basis for a standard high school, 7.
- Length of recitation periods, 8; of term, 8.
- Library, standards, 9; if congested, 52; state aid, 11.
  
- Magazines for pupils, 13; for teachers (professional), 42.
- Manual arts periodicals, 47.
- Maps, 13.
- Marking system, 34.
- Mathematics teachers' references, 47.
- Meetings, teachers, 49, 50.
- Moving pictures, 28.
- Museum, 18.
- Music, references, 25, 41; credit for, 38.
  
- Non-standard high schools, number of years work to offer, 30; classification, 30.
- Nurseries, 26.
  
- Opening day, duties of principal before, 49, 50.
- Organization duties of principal, 48, 49.

- Parent-Teacher Association, 41.
  - Pennants, novelties, etc., 25.
  - Periods, length of, 8, 53, 56.
  - Permanent record cards, 27.
  - Philosophy and psychology of education, 43.
  - Physical education, references, 47; statement concerning, 42.
  - Physics laboratory apparatus, 20.
  - Pictures, 25.
  - Plan for period by years, 52.
  - Plane Geometry, 54.
  - Plays, 25, 38.
  - Principalship, 48; duties of principal, 49; professional library, 42.
  - Professional library, 42.
  - Program making, 54, 52.
  - Publicity, 43.
  - Publishers, 48.
  - Pupil load, 53.
- 
- Recitation periods, length of, 8.
  - Records and reports, 27.
  - Registration of pupils, 54.
  - References, for principal, 42; for teachers, 45.
  - Reorganization program, 55.
  - Reports, 27.
  - Research, educational, guides to, 44.
  - Requirements for accredited high school, 7.
- 
- Schedule, daily, 54, 53, 56.
  - School building, standards, 29, 44.
  - School publicity, 43.
  - Science laboratory, the room, 15; apparatus, 16; professional books and periodicals, 47.
  - Scout Clubs, 41.
  - Service systems, 29, 44.
  - Size of classes, 53.
  - Social science teachers' professional books and periodicals, 46.
  - Southern Association requirements, 32.
  - Special days to be observed, 39.
  - Standard high schools, 7.
  - Subjects required for graduation, 8; alternation, 59.
  - Substitute teachers, 52.
  - Supervisory duties, of principal, 51.
  - Summer high schools, 32.
  - Supervised-study period, 53, 8.
  - Supplies, dealers in, 24-27.
- 
- Teachers, number allowed, 7; certificate, 7; load, 52; substitutes, 52; professional library, 45; employment, 52.
  - Term, length of, 8.
  - Tests, intelligence and achievement, 36.
  - Transcript blanks, 53.
  - Typewriting, 77, 54.
- 
- Units, definition of, 16; number required for graduation, 16.
- 
- Visual education, 28.
  - Vocational guidance and information, 54, 43.
- 
- Water, in building, 29; in science laboratory, 16.









Photomount  
Pamphlet  
Binder  
Gaylord Bros. Inc.  
Makers  
Syracuse, N. Y.  
PAT. JAN 21, 1908

UNIVERSITY OF N.C. AT CHAPEL HILL



00034036212

FOR USE ONLY IN  
THE NORTH CAROLINA COLLECTION

---

---



